
Handbook of Argumentation Theory

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With 78 Figures and 1 Table



Springer Reference

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ISBN 978-90-481-9472-8 ISBN 978-90-481-9473-5 (eBook)
ISBN 978-90-481-9474-2 (print and electronic bundle)
DOI 10.1007/978-90-481-9473-5
Springer Dordrecht Heidelberg New York London

Library of Congress Control Number: 2014939853

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Printed on acid-free paper

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Preface

When Springer Academic invited me in 2008 to write a handbook of argumentation theory, I realized two things immediately – first, that the time was indeed ripe for publishing a new overview of the state of the art in argumentation theory, and second, that it would be wise to carry out this project with a small group of competent authors who could easily work together. Both considerations were based on my experience with these kinds of projects.

As far as I am concerned, the history of the present project starts in the early 1970s, when I set off writing the first handbook of argumentation theory with Rob Grootendorst and Tjark Kruijer. The resulting overview of the state of the art, published in 1978 in Dutch as *Argumentatietheorie*, was already in 1981 followed by a second, considerably enlarged edition. English translations of this handbook were published in 1984 and 1987 by two different publishers. To do justice to the rapid developments in the field, in the early 1990s I thought it necessary to prepare a new, updated overview. I invited a group of internationally prominent argumentation scholars to join me. The study we coauthored, *Fundamentals of Argumentation Theory*, was published in 1996.

During the past two decades, argumentation theory has further matured as a discipline and the number of publications devoted to argumentation has grown considerably. Neoclassical theoretical approaches to argumentation, such as the Toulmin model and the New Rhetoric, have inspired new developments. In addition, prominent approaches of a more recent date, such as Informal Logic and Pragma-Dialectics, have expanded in various ways. Meanwhile, Formal Dialectic and other formal approaches have also been pursued further. Promising connections between argumentation theory and artificial intelligence have been established. Moreover, important new approaches have come into being, sometimes inspired by disciplines distinct from, but related to, argumentation theory. Another striking and noteworthy development is that the theoretical interest in argumentation has now spread worldwide.

It is clear that, 20 years after the completion of the manuscript for the previous overview, it is high time for a grand update. To make this happen, I have invited five Dutch colleagues to coauthor the new *Handbook of Argumentation Theory* with me: Bart Garssen, Erik C. W. Krabbe, A. Francisca Snoeck Henkemans, Bart Verheij, and Jean H. M. Wagemans. All of them are active argumentation scholars with the required kind of expertise. They have experience with carrying out joint writing

projects, with other authors as well as with each other. As we all live in The Netherlands, we could easily meet whenever it was needed. It was decided from the start that the authors would be together responsible for the entire text of the handbook. Although there was, of course, a certain division of labor, this shared authorship was from the beginning reflected in the working process. The first drafts of some chapters were written by two or more authors, and in all cases several other members of the team contributed to the revision of the texts.

In the *Handbook of Argumentation Theory*, we have tried to do justice to the broadness of the field and the existing variety in the theoretical approaches that are pursued. Hence, it goes without saying that for all topics we were dealing with, we needed profound and serious feedback from several specialists in the field. For that purpose, a board of editors was formed, consisting of scholars who are leading experts in the topics discussed and the theoretical approaches described. As we had hoped and expected, the members of the board have commented critically and precisely on earlier versions of all chapters of the handbook. The argumentation scholars who served as members of the board are mentioned in the Acknowledgment section, together with their affiliations and the chapters they reviewed. Without their invaluable assistance, the overview presented in this volume could certainly not have been given. On behalf of all authors, I want to emphasize that we are most grateful for their constructive comments and criticisms.

Another kind of indispensable help has come from prominent argumentation scholars in non-Anglophone countries and from scholars from disciplines related to argumentation theory. They provided us with the material we needed in order to be able to describe the developments in the field. In addition, they also contributed greatly in improving these descriptions. Their assistance made it possible to add the last chapter to the handbook, in which the disciplinary and geographical broadening of argumentation theory is at issue. For this reason, their names and the sections they advised about are mentioned explicitly below – accompanied by an expression of our sincerest thanks to all of them.

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31 August 2013

Frans H. van Eemeren

Acknowledgments

The following members of the editorial board of the *Handbook of Argumentation Theory* have assisted the authors in a fundamental way in guarding the quality of the volume:

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1.1 Argumentation as a Topic of Research

Argumentation is a phenomenon we are all familiar with. We do not only know it from formally regulated juridical and parliamentary debates but also from less formal discussions at work, from editorials and letters to the editor in the newspaper, and even from the more informal exchanges we have at home about what to think of something or how something should be done. Argumentation is in fact already put forward right after we get up in the morning and point out at breakfast for what reasons we should not be expected to do the shopping today. There is argumentation, again, when during the coffee break we illustrate profusely to our colleague that the movie she recommended watching is actually not worth seeing and again when we try to persuade her a moment later, after we have resumed work, to change her priorities in dealing with the tasks we are faced with. And so it goes on during the whole day. In other words, argumentation is omnipresent, all day and everywhere.

Argumentation arises in response to, or in anticipation of, a difference of opinion,¹ whether this difference of opinion is real or merely imagined.² More often than not, the difference of opinion does not take the shape of a full disagreement, dispute, or conflict, but remains basic: There is one party that has an opinion and there is another party that is in doubt as to whether to accept this opinion. Argumentation comes into play in cases when people start defending a view they assume not to be shared by others. Not only the need for argumentation, but also the requirements argumentation has to fulfill, and the structure of argumentation are connected with a context in which doubt, potential opposition, and perhaps also objections and counterclaims arise. Normally, when argumentation is put forward it is presumed that the addressee is not yet convinced of the acceptability of the “standpoint” at issue. Otherwise advancing argumentation would be pointless.

If the standpoint at issue is, for instance, my contention that the King of the Netherlands is inaugurated in Amsterdam, my argumentation to defend this standpoint against your doubt could be as follows: “Amsterdam is the capital of the Netherlands and the King of the Netherlands is inaugurated in the capital.” Argumentation always consists of a constellation of expressed thought contents, called *propositions*, advanced in defense of the standpoint at issue. Such propositions can be of various kinds and of various degrees of complexity. The simplest propositions make a connection between a subject (i.e., someone or something talked about) and a predicate (i.e., a property that is assigned to the subject). In the proposition *Amsterdam is the capital of the Netherlands*, for example, the property of being the capital of the Netherlands (the predicate) is assigned to the city of Amsterdam (the subject), and in the proposition *the King of the Netherlands is inaugurated in the capital*, the property of being inaugurated in the capital (the predicate) is assigned to the King of the Netherlands (the subject).

When the standpoint that is defended is positive, i.e., expresses a positive position regarding the proposition involved, the constellation of propositions that constitutes the argumentation is to increase the acceptability of the standpoint by justifying the proposition involved in the standpoint. “I think that *the King of the Netherlands is inaugurated in Amsterdam*, because *Amsterdam is the capital of the Netherlands* and *the King of the Netherlands is inaugurated in the capital*” is an example of this positive variant. When the standpoint that is defended is negative, i.e., expresses a negative position regarding the proposition involved, the constellation of propositions that constitutes the argumentation is to increase the acceptability of the negative standpoint by refuting the proposition involved in the standpoint. An example of this negative variant would be: “I do not think that *the King of the Netherlands is inaugurated in The Hague*, because *The Hague is not*

¹ In our usage, if they are to be taken seriously, people who put forward argumentation can always be held to trying to resolve a difference of opinion, even if they only go through the motions, and a communicative activity that is not aimed at resolving a difference of opinion is not considered as argumentation.

² A difference of opinion can be overt and expressed explicitly, but it may also be covert and remain implicit.

the capital of the Netherlands and *the King of the Netherlands is inaugurated in the capital*.” As a rule, the negative variant is used in response to (or in anticipation of) someone else claiming the positive version of the same standpoint (“I think that *the King of the Netherlands is inaugurated in The Hague*”).

A definition of argumentation suitable to be used in argumentation theory as an academic discipline should, in our view, connect with commonly recognized characteristics of argumentation as it is known from everyday practice. This means that it is to be recommended to start developing our definition from the lexical meaning of the word “argumentation” in ordinary language use. Without aiming to include all possible meanings of argumentation in our definition, in this *Handbook of Argumentation Theory*, we shall therefore take our point of departure in the general understanding of the word “argumentation” inherent in ordinary usage. In this way we intend to create an adequate basis for providing a more precisely delineated definition of argumentation that is suitable for explaining the various topics that are examined in argumentation theory and discussing the theoretical perspectives and approaches of argumentation that have been developed.

In taking account of the meaning of the pivotal word “argumentation” in ordinary usage, it is important to realize that there are striking differences between, on the one hand, its lexical meaning in English and, on the other hand, the lexical meaning of its – very common – counterparts in other European languages.³ Because these differences relate to vital characteristics,⁴ which have significant consequences for the conceptualization of argumentation, they cannot be dismissed as idiosyncratic peculiarities.⁵ It is noteworthy that the counterparts (would-be equivalents) of “argumentation” in other languages lack some traits that are confusing in the English word. In addition, they already display certain characteristics that are crucial to a definition of argumentation appropriate to argumentation theory.

A first relevant difference between the English word “argumentation” and its counterparts in other languages is that in the latter both the meaning of argumentation as a process and its meaning as a product are naturally included. Without stretching ordinary usage in any way, the Dutch word “argumentatie,” for instance, can be used to refer to the process of argumentation (“Don’t interrupt me just now: I am in the middle of my argumentation [argumentatie]”) as well as to the product of argumentation resulting from it (“I have looked into your argumentation [argumentatie] but I don’t find it very strong”).⁶ In English usage this is not the

³ Among the counterparts of “argumentation” are in French “argumentation,” in German “Argumentation,” in Italian “argomentazione,” in Portuguese “argumentação,” in Spanish “argumentación,” in Dutch “argumentatie,” and in Swedish “argumentation.”

⁴ Our survey of the characteristics of argumentation is based on van Eemeren (2010, pp. 25–29).

⁵ Without jumping to unjustified conclusions about the relationship between language and thinking, it can be observed that the linguistic differences concerned may have an impact on how argumentation is viewed and can be of influence on the theorizing.

⁶ Because Dutch is our native language, we tend to rely in our comparisons with English usage in the first place on similarities and differences with Dutch. Our observations, however, apply equally to other languages.

case –at any rate not so clearly, since the process meaning is predominant. This is important because the process-product combination is a vital characteristic of argumentation that is to be preserved in our definition.

A second relevant difference is that the non-English words for argumentation are connected exclusively with constructive efforts to defend one's position by convincing the other party of the acceptability of the standpoint at issue. This means that in these languages argumentation is associated with reasonableness and acting reasonably.⁷ Unlike the word "argumentation" and the related word "argument" in English,⁸ the non-English words for argumentation have nothing to do with quarreling, skirmishing, squabbling, bickering, wrangling, haggling, or any other negatively charged verbal activity. The Dutch word "argumentatie," for instance, refers to a deliberate effort to resolve a difference of opinion (real or projected) by reasonably convincing the addressee.⁹ Using argumentation implies making an appeal to the reasonableness of the audience, irrespective of whether this audience consists of just one interlocutor or, for instance, of all potential readers of a newspaper. Due to the lack of any negative connotations, when starting from the meaning of the non-English counterparts of the word "argumentation" in defining argumentation, no artificial stipulations are needed to rule out undesired aggressive meanings.

A third difference is that, unlike the English word "argumentation," its non-English counterparts refer only to the constellation of propositions put forward in defense of a standpoint without including the standpoint itself as well.¹⁰ In this usage, the argumentation in "You should not listen to Peter, because he is prejudiced," for instance, consists only of the statement that Peter is prejudiced (and the unexpressed premise that prejudiced people are not worth listening to). The standpoint expressed in the advice that you should not listen to Peter is being defended by the argumentation, but is not part of this argumentation. Making this distinction allows for a definition of argumentation in which the standpoint and the argumentation put forward in its defense are viewed as connected but separate entities, which facilitates the analysis and evaluation of their relationship and the way in which this relationship is established in a particular case (van Eemeren and Grootendorst 1984, p. 18).

⁷ This does not mean, of course, that in practice argumentation cannot be abused, so that in these cases there is no matter of acting reasonably.

⁸ See, for instance, the description of "argument" in *Negotiation: An A-Z Guide* as "a destructive form of debate" (Kennedy 2004, p. 22). Some negotiations, the guide observes, "never get beyond argument." According to Hamble (2003, p. 448), ordinary arguers connect the English term *argument* with "a close-minded pursuit of victory by one or both parties."

⁹ Resolving a difference of opinion does not mean aiming for a happy state of mutual consensus that puts the argumentative process to a definitive end. Later on, the outcome achieved may not be considered satisfactory, so the argumentative process is continued. On other matters the argumentative process will continue to go on anyway.

¹⁰ As Tindale (1999, p. 45) explains, it is "the European fashion" to refer to the premises of an argument as the *argumentation* and to the conclusion by using another term, such as *standpoint*.

Although not too much should be made out of largely coincidental language differences,¹¹ it is clear that, in principle, the lexical meaning of its non-English counterparts constitutes a better conceptual basis for defining *argumentation* as a technical term in argumentation theory than that of the English word “argumentation.” Hoping that our brief crosslinguistic comparison has provided some conceptual clarification, we will start from the meaning of the non-English counterparts in providing a definition of the (English) term *argumentation*. In defining this term, we will also take account of some general characteristics of argumentation as we all know it that are independent of any specific language. Let us consider the most significant of them.

To start with, argumentation is not just a structural entity, but first of all a *communicative act complex* consisting of a functional combination of communicative moves. Although these communicative moves are usually verbal, they can also be wholly or partly nonverbal, e.g., visual.¹² Its communicative property characterizes argumentation as a phenomenon of communicative discourse in the broad meaning given to “discourse” in the field of study known as pragmatics. The functional intent with which the communicative act complex of argumentation is put forward is reflected in the structural design of the discourse.

Next, rather than being part of a monologue, argumentation is an *interactional act complex* directed at eliciting a response that indicates acceptance of the standpoint that is defended. Viewed in this way, argumentation is, in principle, part of a dialogue with the addressee – and perhaps also with others instrumental in reaching the addressee. This dialogue may be explicit, as is the case when argumentation is advanced in a full-blown discussion, or implicit, as when it is directed at a noninteractive audience or readership that may even not be physically present. The interactional act complex of argumentation is shaped by the explicit or implicit dialogue taking place in the argumentative discourse.

Further, rather than being just an expressive act free of any obligations, as a rational activity of reason, argumentation involves putting forward a constellation of propositions *the arguer can be held accountable for*. The commitments created by argumentation depend not only on the propositions that are advanced but also on the communicative function they have in the discourse. These commitments vary according to the communicative and interactional choices that have been made in the argumentative moves which together constitute the argumentation and the way in which they are in the act complex of argumentation linked with the standpoint that is being defended.

Finally, argumentation involves an appeal to the addressee as *a rational judge who judges reasonably* rather than playing on their basic instincts and emotional

¹¹ There is no reason, for instance, for jumping to Sapir-Whorf-like conclusions regarding the relationship between language and thinking.

¹² Because argumentation can also be nonverbal, we prefer to define it, in a more general way, as a “communicative” rather than a “verbal” (“linguistic”) act complex (cf. van Eemeren et al. 1996, p. 2). See also Sperber (2000).

hang-ups.¹³ Argumentation is not aimed at making the addressee accept a standpoint automatically, as may happen in persuasion based on sentiments or prejudice. Instead, it is aimed at convincing the addressee of the acceptability of the standpoint by making them see that mutually shared critical standards of reasonableness have been met. Trying to convince the addressee by means of argumentation relies on the idea that the other party will approach the argumentation constructively, judging its soundness reasonably.

Although argumentation may be basically aimed at resolving a difference of opinion about the acceptability of a standpoint, like any other communicative and interactional act, it can also be used improperly.¹⁴ This happens, for instance, when the arguer only goes through the motions of trying to convince the addressee but is in fact not interested in gaining their acceptance – perhaps already knowing that the measure that is advocated will be effectuated anyway. Even then, however, because argumentation is advanced, the arguer can be held to be committed to resolve the difference of opinion on the merits. Another example may be a television debate between two political rivals at election time: Both of them will be in the first place out to win over the potential voters watching television at home (“the gallery”) and perhaps also to impress the media reporters, but in putting forward argumentation to each other, they still have to proceed as if they are having a reasonable discussion.¹⁵

Recapitulating, we can now propose a definition of argumentation which is lexical in the sense that it starts from ordinary usage and stipulative in the sense that the description has been made more precise, explicit, and comprehensive with a view to making use of it in explaining about argumentation theory.¹⁶ The definition we provide combines, *expressis verbis*, the process dimension of argumentation as a communicative and interactional act complex aimed at resolving a difference of opinion and the product dimension of argumentation as a constellation of propositions designed to make the standpoint at issue acceptable¹⁷:

¹³ Although the terms *rational* and *reasonable* often seem to be used interchangeably, we think that it is useful to make a distinction between acting “rationally” in the sense of using one’s faculty of reason and acting “reasonably” in the sense of utilizing one’s faculty of reason in an appropriate way. Acting reasonably presupposes acting rationally while observing at the same time the appropriateness standards prevailing in the exchange concerned.

¹⁴ If only because arguers may want to realize at the same time other, non-argumentative aims, such as being viewed as nice or intelligent.

¹⁵ Even in seemingly irresolvable controversies known as “deep disagreements,” the parties usually keep pretending that they are trying to resolve their difference of opinion on the merits, so that they cannot be accused of being unreasonable by the outside world.

¹⁶ Our definition, which is based on van Eemeren (2010, p. 29), covers vital characteristics of argumentation emphasized in nontechnical definitions of argumentation as an attempt at rational persuasion or at influencing (or convincing) others by providing good reasons to justify a claim.

¹⁷ If argumentation is expressed verbally, this act complex has both a propositional content and a communicative function (“illocutionary force”), just like most other speech acts, whether they are elementary or complex (in the sense of compound). A set of speech acts only constitutes a complex speech act of argumentation if both the propositional content of the constellation of propositions involved and their joint communicative function meet the pertinent “identity conditions” (see van Eemeren and Grootendorst 1984, pp. 29–46).

Argumentation is a communicative and interactional act complex aimed at resolving a difference of opinion with the addressee by putting forward a constellation of propositions the arguer can be held accountable for to make the standpoint at issue acceptable to a rational judge who judges reasonably.

In case argumentation pertains to a positive standpoint, it consists of *pro-argumentation* aimed at justifying the proposition involved in the standpoint. In case argumentation pertains to a negative standpoint, it consists of *contra-argumentation* aimed at refuting the proposition involved in the standpoint. The term *argumentation* refers in both cases to the whole constellation of propositions that is put forward in defense of the standpoint. Because each of the propositions constituting the constellation has its own share in providing grounds for accepting the standpoint at issue, in principle, all these propositions by themselves also have an argumentative function. This is expressed terminologically by calling them the *reasons* that make up the argumentation as a whole.¹⁸

1.2 The Descriptive and Normative Dimensions of Argumentation Theory

The label *argumentation theory* covers the study of argumentation in all its manifestations and varieties, irrespective of the intellectual backgrounds of the theorists, their primary research interests, and their angles of approach. Other general labels that are used, such as *informal logic* and *rhetoric*, refer in the first place to specific theoretical perspectives on the study of argumentation (and usually include also other research interests than argumentation). In order to create a common background for our treatment of the most prominent contributions to the study of argumentation in the following chapters, we shall in this introductory chapter explain in a nutshell what the umbrella term *argumentation theory* involves.

Because the standpoints at issue in a difference of opinion and the argumentation advanced to support them can pertain to all kinds of subjects, the scope of argumentation theory is very broad. It ranges from argumentative discourse in the public sphere and the professional sphere to argumentative discourse in the personal sphere. The types of standpoints supported by argumentation vary from *descriptive* standpoints (“The King of the Netherlands is inaugurated in Amsterdam”) to *evaluative* standpoints (“The Mahler concert in the Concertgebouw was excellent”) and *prescriptive* standpoints (“You should come with me to church this Sunday”).¹⁹ It is important to realize that argumentation is certainly not used only for truth

¹⁸ Næss (1966) uses the term *arguments* for the separate propositions that together constitute an argumentation, but because of the diffuse meaning of the English word “argument,” this is confusing.

¹⁹ Whether standpoints are descriptive, evaluative, or prescriptive, they can always be reconstructed as a claim to acceptance (van Eemeren 1987b).

finding and truth preservation.²⁰ In fact, when it comes to determining whether a claim is true or not, if this is an option most people will prefer to seek recourse to logical proof or empirical evidence.²¹ As can be observed in all walks of life, argumentation is in a great many cases used for gaining approval with evaluative standpoints involving ethical or aesthetic judgments or with prescriptive standpoints involving practical or policy judgments.²²

The fact that argumentation theory has such a wide scope does not mean that its jurisdiction extends automatically to every claim to acceptability made in argumentative discourse. Outside its jurisdiction are those cases in which it is clear that the prerequisites for reasonable argumentative discourse have not been fulfilled. These are cases in which, due to causes beyond their control, the states of mind of the participants in the discourse or the communicative situation in which they operate make a critical discussion impossible.²³ This is, for instance, the case when the arguer is completely drunk or is not allowed to speak freely because he or she will be punished for doing so. Argumentation theory deals with factors playing a part in resolving differences of opinion by means of argumentative discourse for which the participants can be held responsible.²⁴

Argumentative discourse aimed at resolving a difference of opinion in a reasonable way has both a normative, critical dimension and a descriptive, empirical dimension, and in argumentation theory, both dimensions need to be taken into account.²⁵ Scholars of argumentation are often drawn to studying argumentation by their practical interest in improving the quality of argumentative discourse where this is called for. In order to be able to realize this ambition, they have to combine an empirical orientation toward how argumentative discourse is conducted with a critical orientation toward how it should be conducted. To give substance to this challenging combination, they need to carry out a comprehensive research program that ensures that argumentative discourse will not only be examined descriptively as a specimen of verbal communication and interaction but also measured against

²⁰ Some theorists suggest otherwise. As Tindale (2004, p. 174) puts it, “Those most eager to enlist a truth requirement among their criteria of argument evaluation are those who see truth as the principal aim of argumentation.”

²¹ Argumentation generally has no major role to play in discussing a claim to acceptance when a decisive solution can readily be offered otherwise.

²² Besides varying in nature, standpoints also vary in firmness (“It is certain that. . .” versus “If you ask me. . .”) and scope (“All. . .” versus “At least some. . .”).

²³ Following Barth and Krabbe (1982, p. 75), we call the prerequisites for reasonable argumentative discourse regarding the participants’ state of mind *second-order conditions* and the prerequisites regarding the communicative situation *third-order conditions* (van Eemeren and Grootendorst 2004, p. 189).

²⁴ Nevertheless argumentation theory can be instrumental in laying bare cases in which the preconditions for reasonable argumentative discourse have not been fulfilled.

²⁵ These two dimensions are reflected in the dual norm for the reasonableness of argumentative moves: adequacy in resolving a difference of opinion (“problem validity”) and intersubjective acceptability (“conventional validity”) (Barth 1972, and Barth and Krabbe 1982, pp. 21–22). See Sect. 3.8, “Næss on Clarifying Discussions”.

normative standards of reasonableness. If the descriptive study of communication and interaction is called *pragmatics*, as is customary among discourse analysts, the need for uniting in the study of argumentation this descriptive research with normative research of argumentation can be realized by construing argumentation theory as a branch of “normative pragmatics” (van Eemeren 1986, and, particularly, 1990).

In normative pragmatics, as we envisage it, argumentation scholars make it their business to clarify how the gap between the normative dimension and the descriptive dimension of argumentation can be bridged in order to integrate critical and empirical insights systematically. In our view, the complex problems that are at stake can only be solved with the help of a comprehensive research program consisting of five interrelated components (van Eemeren and Grootendorst 2004, pp. 9–41). On the one hand, the program has a philosophical component, in which a philosophy of reasonableness is developed, and a theoretical component, in which, starting from this philosophy, a model for argumentative discourse is designed. On the other hand, the program has an empirical component, in which argumentative reality as it manifests itself in communicative and interactional exchanges is investigated. Next, in the pivotal analytical component of the research program, the normative and the descriptive dimensions are systematically linked together by a theoretically motivated and empirically justified reconstruction of argumentative discourse. Finally, in the practical component, the problems that occur in the various kinds of argumentative practices are identified, and methods are developed to tackle these problems.²⁶ The various components of the complex research program of argumentation theory and their relationships are depicted in Fig. 1.1.

In developing a philosophy of reasonableness, argumentation theorists reflect upon the rationale for the view of reasonableness that is to underlie their theoretical model of argumentation. Should the standards for regarding argumentation acceptable be based on an “anthropological” reasonableness conception that starts from what is considered reasonable by the members of a certain communicative community? Or would relativism then lead to an undesired proliferation of reasonableness conceptions? Would a “geometrical” conception of reasonableness, which regards argumentation to be acceptable only if it is built on indisputable foundations and constructed in a logically flawless way, be a better alternative? Or would the absolutism involved in applying these strict standards result in too rigid a conception of reasonableness? Could a “critical” conception of reasonableness that replaces the justification of argumentation by systematic testing of the acceptability of all argumentative moves perhaps be the solution? Or would this continual discussion imply a conception of reasonableness that is not realistic?²⁷

²⁶ The five components of a fully fledged research program in argumentation theory were introduced in van Eemeren (1987a).

²⁷ The philosophical tripartition used here is based on Toulmin (1976), who, in fact, distinguished between these three approaches when dealing with the problem of giving an account of reasons for believing something.

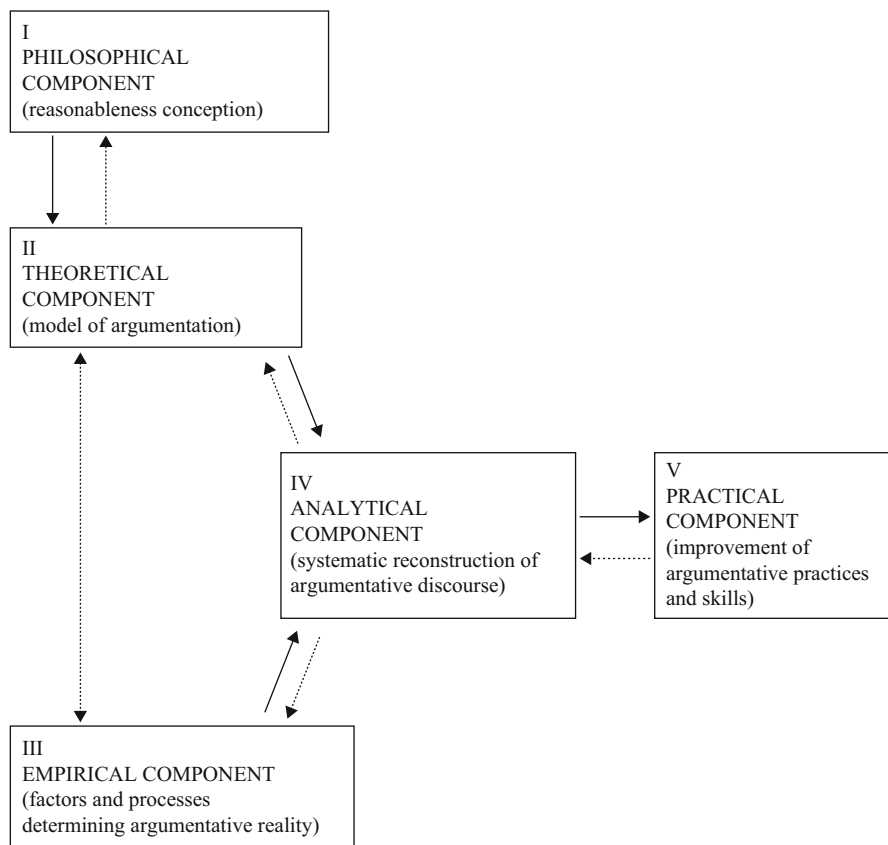


Fig. 1.1 Components of the research program of argumentation theory

In argumentation theory, conceptions of reasonableness as we have just distinguished lead to the adoption of different standards for the validity, soundness, or appropriateness of argumentation in the theoretical models that are based on these conceptions. The anthropological conception generally results in the adoption of a rhetorical model of argumentation identifying those properties of the argumentative discourse that play a vital role in persuading an audience of the acceptability of the standpoint at issue. Such a model is usually presented as a synthesis of potentially persuasive communicative and interactional means, the persuasiveness of these means being dependent on the context and the argumentative situation in which the argumentative discourse takes place. The geometrical conception, which is sometimes too hastily ascribed to formal logicians, is likely to appeal to rationalists who aim at preserving certainty. This conception will generally result in the adoption of a logical model of argumentation that is designed to provide universal standards for assessing whether the argumentation that is advanced guarantees that the standpoint defended is true if the premises are true. The critical conception will

result in the adoption of a dialectical procedure for systematically testing the acceptability of the standpoints at issue. Such a model takes the shape of a regulated discussion in which arguments and critical responses are exchanged in accordance with the rules of a dialectical discussion procedure.

Unlike in most other fields, the empirical research that is carried out in argumentation theory does not constitute a test of the theoretical model that is favored. This is because in this case the model of argumentation is a normative instrument for assessing the quality of argumentation put forward in argumentative reality and deviations from the model are no indication that the model is wrong.²⁸ The model is nevertheless a point of orientation for empirical research. It indicates which factors and processes are worth investigating and which theoretical standards are to be compared with the norms prevailing in argumentative reality.

Empirical research that is of interest to protagonists of a rhetorical approach will concentrate on factors and processes inducing persuasiveness. This empirical research tends to be of a qualitative kind, but a connection with quantitative persuasion research is in fact very well possible.²⁹ Protagonists of a dialectical approach are particularly interested in empirical research that makes clear to what extent the elements pertinent to the argumentative acting of ordinary arguers and the standards these arguers adhere to agree with those included in the dialectical model. As a rule, these dialecticians will be interested in explorative qualitative research as well as in quantitative research based on these explorations that leads to generic conclusions.

Analytical research in argumentation theory is aimed at reconstructing argumentative discourse as it occurs in argumentative reality from the perspective of the model of argumentation chosen as the theoretical starting point. Just as a logical analysis involves a reconstruction in logical terms (e.g., in terms of propositional logic), a rhetorical analysis boils down to a reconstruction making use of rhetorical concepts and a dialectical analysis to a reconstruction from the perspective of a dialectical model. In all cases, the reconstruction needs to be in agreement with the requirements instigated by the theoretical model taken as the starting point. In addition, the reconstruction must be accounted for by referring to empirical data from the discourse that is analyzed as they are to be viewed in the specific communicative context in which the discourse occurs. Argumentation theorists engaging in analytical research, whichever theoretical background they may have, need to develop appropriate tools and methods for reconstructing argumentative discourse.

Practical research in argumentation theory is aimed at characterizing the (spoken and written) argumentative practices that can be distinguished in the various

²⁸ Only in case of a purely descriptive theory, the empirical research could be aimed at testing the model, but so far no fully fledged argumentation theory without a critical dimension has been developed.

²⁹ In case the focus is on a unique historical text or discussion, i.e., a specific speech event, qualitative research is in principle the only appropriate kind of empirical research (although quantitative data may play a part).

communicative domains and developing instruments for improving the quality of argumentative discourse where this is due. These instruments may consist of designs for the formats of communicative activity types or of methods for improving arguers' skills in analyzing, evaluating, and producing argumentative discourse. The improvement of the quality of argumentative practices can, again, take place from various perspectives, varying from the logical and the dialectical to the rhetorical. Not only the theoretical angle of approach will differ in each perspective, but there will also be systematic differences in emphasis and focus. Practical research undertaken from a logical perspective, for instance, will concentrate on the formal aspects of reasoning, whereas practical research from a rhetorical perspective will emphasize the communicative aspects of the persuasion process, and practical research from a dialectical perspective will emphasize the procedural aspects of a critical argumentative exchange. In addition, there will probably be differences in the methods of instruction, pedagogy, and didactics that connect with the perspective that is chosen.

The general objective of argumentation theory is, in the end, a practical one: to provide adequate instruments for analyzing, evaluating, and producing argumentative discourse. It can therefore be said that the *raison d'être* of the other components of the comprehensive research program carried out in argumentation theory is that they eventually enable us to develop such instruments. From whichever perspective they have been shaped, the philosophical and theoretical insights into argumentative discourse that have been articulated, which are by analytical means connected with the empirical insights gained into argumentative discourse, create together the possibilities for methodical applications of the achievements of argumentation theory to the various kinds of practices of argumentative discourse.

The analysis, evaluation, and production of argumentative discourse concern both the point of departure of argumentation, consisting of the explicit and implicit material and procedural premises that serve as its starting point, and the layout of the argumentation as it is displayed in the constellation of propositions which are explicitly or implicitly advanced in support of the standpoints at issue. Both the point of departure and the layout of the argumentation are to be judged by appropriate standards of evaluation that are in agreement with all requirements a rational judge who judges reasonably should comply with. This means that the descriptive and normative aims instrumental in pursuing the general objective of argumentation theory can be specified as follows³⁰:

1. Giving a descriptive account of the components of argumentative discourse that constitute together the point of departure of argumentation

³⁰ The descriptive aims of argumentation theory are often associated with the "emic" study of what is involved in justifying claims and what are to be considered good reasons for accepting a claim viewed from the "internal" perspective of the arguers while the normative aims are associated with the "etic" study of both matters viewed from the "external" perspective of a critical theorist.

2. Giving a normative account of the standards for evaluating the point of departure of argumentation that are appropriate to a rational judge who judges reasonably
3. Giving a descriptive account of the components of argumentative discourse that constitute together the layout of argumentation
4. Giving a normative account of the standards for evaluating argumentation as it is laid out in argumentative discourse that are appropriate to a rational judge who judges reasonably³¹

1.3 Crucial Concepts in Argumentation Theory

In the descriptive and normative research concerning the point of departure and the layout of argumentation carried out in argumentation theory, certain theoretical concepts play a crucial part. These concepts are indispensable in developing instruments for methodically improving the quality of the analysis, evaluation, and production of argumentative discourse. Crucial concepts that are to be taken into account are the notions of “standpoint,” “unexpressed premise,” “argument scheme,” “argumentation structure,” and “fallacy.” As a background to our treatment of the various theoretical approaches to argumentation in the following chapters, we discuss these notions briefly in this section.

Because a completely “neutral” starting point for discussing these notions is hard to find, we start in each case from our own understanding of the concept. Only when this seems necessary we will mention the main similarities and dissimilarities with related concepts and terms used by others. Since they play a vital role in dealing with the analysis, evaluation, and production of argumentative discourse, all notions involved are immediately connected with central problem areas in argumentation theory.

1.3.1 Standpoints at Issue in Argumentative Discourse

If in argumentative discourse it is not clear exactly which standpoint is at issue,³² there is no way of telling whether the argumentation that is advanced can lead to a resolution of the difference of opinion that is discussed. In such a case, it is not only impossible to determine whether the argumentation does indeed provide enough support for the standpoint but even whether it is relevant at all. Identifying the standpoints discussed is therefore the first task in analyzing argumentative discourse, and identifying means for tracing standpoints constitutes a central problem

³¹ Basically, these general objectives were already formulated in van Eemeren, Grootendorst and Kruijer (1978, p. 24).

³² It is important to realize that verbal expressions are not “by nature” standpoints, arguments, or other argumentative moves, but only when they serve a specific function in the communicative context in which they are used.

area in argumentation theory. The problems concerned can be dealt with only if it is first clear what exactly is meant by a *standpoint*. For this reason in argumentation theory, the notion of a standpoint needs to be defined more precisely.

We use the term *standpoint* (or *point of view*) to refer to what is at issue in argumentative discourse in the sense of what is being argued about by the parties. In advancing a standpoint, the speaker or writer assumes a positive or negative position regarding a proposition. Because advancing a standpoint implies undertaking such a positive or negative commitment, whoever advances a standpoint is obliged to defend their standpoint if challenged to do so by the listener or reader.

The standpoints at issue in a difference of opinion can be descriptive, evaluative, or prescriptive, but in all cases they can be reconstructed as a claim to acceptability (in case of a positive standpoint) or unacceptability (in case of a negative standpoint) regarding the proposition the standpoint pertains to. This is even so if the standpoint is not directly presented as an “assertive” but, for example, as a (rhetorical) question (“Do we really want to do without a theater in this city?”). To serve as a standpoint, the speech act concerned needs to be advanced as a claim to acceptability in a context in which the addressee may be expected to have doubts regarding the acceptability of the assertive involved.³³ An announcement, for instance, is certainly an assertive but will, as a rule, not function as a standpoint.

Besides the term *standpoint*, a number of other terms are in use referring to similar concepts. Because these “equivalents” of a standpoint stem, as a rule, from different theoretical contexts, there are often also certain dissimilarities. This is why it will be expedient to maintain a distinction. On the one hand, there are terms such as *claim*, *conclusion*, *thesis*, and *debate proposition* which can be used to refer from different theoretical angles to virtually the same concept as the term *standpoint*. On the other hand, there are terms such as *belief*, *opinion*, and *attitude* which usually refer to related concepts that are in relevant ways different from a standpoint. These are concepts that suit the purposes of scholars who approach their object of study from a different angle than argumentation theory. To illuminate the similarities and dissimilarities, we shall first pay attention to the first group of terms and concepts and after that deal with the second group.

The notion of a “claim” was introduced in argumentation theory in 1958 by Stephen Toulmin (2003), and the term *claim* is still in use. In Toulmin’s use, a claim presents the solution to a problem or, more generally, an assertion that deserves our attention (2003, pp. 11–14). The merits of a claim depend on the arguments that can be produced in its support. A significant difference between a claim and a standpoint is that, in Toulmin’s approach, every assertion implies a claim, whereas not every assertion expressed in argumentative discourse automatically implies a standpoint.

³³ For a more detailed definition of a standpoint as a (complex) speech act in terms of identity and correctness conditions see Houtlosser (2001, p. 32).

The notion of a “conclusion” is in the context of argumentation theory primarily used by logicians, both formal and informal. In ordinary usage, conclusions are an end point, but in the parlance of these logicians, they can be stated at the beginning, somewhere in the middle, or at the end.³⁴ They use the term *conclusion* in various ways: to denote what is inferred in a piece of reasoning or follows or may be derived from a set of assumptions or premises but also to denote what is being defended by evidence or reasons that are advanced to persuade or convince others (Govier 1992, p. 127) – “the claim or statement that is in dispute and that we are trying to support with reasons” (Govier 1992, p. 5). In addition, the term *conclusion* can be used to denote the result of an inquiry or investigation, in which case the conclusion is the hypothesis advanced to explain the phenomenon that was in question (“After examining several hypotheses our conclusion is that faulty wiring caused the fire”). In the last case, the conclusion makes what was in question more comprehensible instead of another set of statements making the conclusion more comprehensible (as the *explanans* does with regard to the *explanandum* in an explanation). In contradistinction, in argumentation advanced in defense of a standpoint, the tenability of the standpoint is at issue.

The notion of a “thesis” was introduced in Aristotle’s *Topics*. The term *thesis* there refers to a “paradoxical belief of some eminent philosopher” or to “a view contrary to men’s usual opinions about which we have an argument” (Aristotle 1984, *Topics*, I, 11, 104b19-24). This narrow concept of a thesis was widened already in Aristotle’s time: “Practically all dialectical problems indeed are now called theses” (Aristotle 1984, *Topics*, I, 11, 104b34-36). In modern formal dialectic (Barth and Krabbe 1982), which builds on Aristotle’s classical dialectic, a thesis is not restricted to philosophical issues, and propounding a thesis is not restricted to philosophers. In formal dialectic, discussing a particular thesis makes sense only if the proponents of a thesis are prepared to commit themselves positively, i.e., to assume an obligation to defend the thesis against the opponent’s criticism, and if the opponents are prepared to take on a negative commitment, i.e., to make use of their unconditional right to criticize the proponent’s thesis systematically. The notion of a thesis thus understood is in principle very similar to that of a standpoint.³⁵

The notion of “debate proposition” stems from the North-American tradition of “academic debate,” in which two parties attempt to justify or refute a (policy) statement by means of argumentation. Like standpoints, debate propositions presuppose a difference of opinion and involve a burden of proof, which the proponents of the standpoints can acquit themselves of by forwarding arguments. A contextual difference is that debate propositions are always part of a formally

³⁴ In principle, conclusions end a piece of reasoning, whereas standpoints get the discussion (and the argumentation) started. When standpoints are presented (“retrogressively”) after the argumentation has been put forward, in the analysis a reconstruction is required which puts the standpoint first, because it occasions the argumentation.

³⁵ Starting from Habermas’s theory of communicative action, Kopperschmidt uses the term *thesis* in the same sense as standpoint, the only difference being that he does not reconstruct a thesis as an assertive but as a “virtualized validity claim” (Kopperschmidt 1989, p. 97).

regimented debate whereas with standpoints this is not necessarily the case. A related difference is that in a debate each party has one and only one task with respect to the proposition that is being discussed, while in discussing standpoints in ordinary argumentative discourse, the parties have more options to choose from.

The notion of “belief” plays an important role in cognitive research on reasoning and in epistemology, the philosophical study of the nature, and justification of belief and knowledge. Jonathan Adler, for one, contends that “reasoning is a transition in thought, where some beliefs (or thoughts) provide the ground or reason for coming to another” (Adler and Rips 2008, p. 1). According to Gilbert Harman (1986), *beliefs* are mental attitudes that pertain to a relation between an object and a certain feature (“Paul is in the garden”) or to a supposed state of affairs (“It is raining”). Unlike a standpoint, a belief is in principle an inner mental state. The commitments involved in adopting a belief differ from those involved in issuing a standpoint. Apart from the initial requirement to have good reasons for adopting the belief, adopting a belief does not create the obligation to provide argumentation to defend the belief when it is challenged.

The notion of “opinion” is a prominent concept in discourse analysis dealing with argumentative conversations. Deborah Schiffrin (1990), for one, describes *opinions* as statements in which an individual, subjective and evaluative position is presented with respect to an existing, possible or desirable state of affair. Unlike beliefs, opinions are inherently disputable. Both opinions and standpoints express a position which is likely not to go undisputed, but opinions do not carry a burden of proof (Schiffrin 1990, p. 248).³⁶ Also, unlike a standpoint, one can very well maintain an opinion at the conclusion of the discussion when one has not succeeded in convincing one’s critic of its acceptability. Another important difference between an opinion and a standpoint is that people who express an opinion do not commit themselves primarily to being right, but to being sincere, whereas in the case of a standpoint, it may just be assumed that the speaker or writer is sincere (even if this can be incorrect).

Besides being analyzed in cognitive psychology and cognitive philosophy, the concept of “attitude” has been studied extensively in social psychology, and the notion is at the center of the so-called persuasion research. Attitudes are enduring inner states of mind which involve a disposition to act in a certain way and do not carry an obligation to argue if challenged.³⁷ Standpoints do not necessarily have any of these characteristics.³⁸

³⁶ The term *opinion*, however, is used in different ways. As Blair has pointed out to us (personal communication), a physician’s medical diagnostic opinion carries a burden of proof. Schiffrin’s analysis applies to a usage in which opinion is not equivalent to (disputable) belief.

³⁷ According to (Daniel) O’Keefe, a prominent persuasion scholar, attitudes are not innate characteristics, but residues of experience (2002, pp. 18–19).

³⁸ For a more detailed overview of the study of standpoints and similar concepts, see Houtlosser (2001).

1.3.2 Unexpressed Premises in Argumentative Discourse

It might be difficult to tell how argumentative discourse should resolve a difference of opinion if certain elements that have remained implicit in the discourse are not taken into account. This applies to standpoints and starting points that are left implicit but especially to “unexpressed premises” in the argumentation that is advanced. When these implicit elements are overlooked, a proper evaluation of the argumentation may be impossible. Unexpressed premises are often pivotal in transferring acceptance from the premises that are explicitly put forward in the argumentation for the standpoint that is defended. Such partly implicit argumentation, which is quite usual in ordinary argumentative discourse, is called *enthymematic*.³⁹

The identification of elements left implicit in enthymematic argumentation is in practice often unproblematic. It is, in the absence of contrary information, obvious to everyone, for example, that in “Amos is pig-headed, because he is a teacher,” the premise left unexpressed is “Teachers are [typically] pig-headed” and it is equally clear that “Thomas is a teacher” is the unexpressed premise in “I am sure that Thomas is pig-headed, since teachers are [typically] pig-headed.” In identifying unexpressed premises in this way, a logical analysis is carried out in which the analyst reconstructs the reasoning underlying the argumentation by adding an extra premise that makes the argument concerned logically valid. In the two examples, logical validity amounts to deductive validity, but in certain cases relying on other kinds of logical validity may be more suitable.⁴⁰

According to some argumentation theorists, in dealing with real-life argumentation, carrying out a logical analysis does not suffice. Starting from a logical analysis, a pragmatic analysis needs to be carried out in which the analyst tries to identify the unexpressed premise by determining on the basis of the available contextual and background information to which implicit proposition the arguer can be held committed to.⁴¹ Because argumentation is always put forward in actual historical circumstances, pragmatic clues facilitating the identification of unexpressed premises may be derived from the linguistic context, the situational context, the macro-context of the speech event, and the intertextual relations with other texts, while additional pragmatic clues may be provided by general or specific background information pertinent to the case concerned.⁴² In cases in which clear and pertinent contextual information and relevant background information are

³⁹ The word “enthymeme” (*enthymema*), which originally denoted a thought or consideration, is nowadays used for a piece of reasoning (not just a syllogism) in which some part is suppressed.

⁴⁰ For further considerations on a logical analysis of unexpressed premises, see Hitchcock (1980a).

⁴¹ For an approach in which a logical analysis is used as a heuristic tool in carrying out a pragmatic analysis aimed at achieving a more specific or, as the case may be, a more general result, see van Eemeren and Grootendorst (1992a, pp. 64–67; 2004, pp. 117–118).

⁴² For the various kinds of resources that can be used in accounting for the reconstruction of unexpressed premises and other elements of argumentative discourse, see van Eemeren (2010, pp. 16–19).

lacking, as the analyst is unfamiliar with the specific circumstances in which the argumentation takes place, a pragmatic analysis is hard to accomplish. In order not to attribute unexpressed premises to arguers to which they cannot be held committed, in such cases the analyst cannot go beyond a logical analysis.

Depending on the theoretical background of the theorists, in argumentation theory different terms are used to refer to what we have called an *unexpressed premise*. They include *implicit*, *suppressed*, *tacit*, and *missing premise*, *reason*, or *argument* but also *warrant*, *implicature*, *supposition*, and even *assumption*, *inference*, and *implication*. Among the theoretical perspectives taken on unexpressed premises are the traditional logical approach, modern “deductivism,” the pluralist logical view, the warrant view, the traditional rhetorical approach, the modern rhetorical approach, the discourse analysis approach, and the pragma-dialectical approach. In this introduction, we will restrict ourselves to mentioning briefly in our own terminology what their distinctive features are.

According to the traditional logical approach, the premise left unexpressed in an enthymeme has to be made explicit and filled in by applying the validity rules of deductive logic to make the argument formally valid (e.g., Copi 1986). In modern deductivism, applying rules of validity is first of all a heuristic tool, which does not necessarily commit the analyst to strict deductivism, i.e., the view that all good arguments must be deductively valid (Hitchcock 1980b). The pluralist logical view is that deductive, inductive, conductive, abductive, and other types of argument each require their own interpretative framework (Govier 1987). In the warrant view, which is based on Toulmin’s (2003) model of argumentation, formal logic does not play an explicit role.

The traditional rhetorical approach is based on Aristotle’s view of the enthymeme in his *Rhetoric*. An enthymeme is then a form of argumentation that is directed at a particular audience, in a particular situation, and with a particular goal. In enthymemes, the arguer exploits the fact that knowledge or information can be conveyed to the audience without putting it explicitly into words. In the modern rhetorical approach, too, formal logic is more or less put aside when it comes to identifying unexpressed premises. In fact, modern rhetoricians are not so much concerned about unexpressed premises but about the relation between a text, the context, and the effect on the audience. When it comes to identifying unexpressed premises, they consider these relations in view of the fact that certain relevant information is left implicit. In a discourse analysis approach, as exemplified in Jackson and Jacobs (1980), the interactional aspect is highlighted. The enthymeme is defined as an argument matched to the questions and objections of the recipient. The pragma-dialectical approach to unexpressed premises (van Eemeren and Grootendorst 1992a) does not exclude logic, but favors a combined logical and pragmatic analysis connected with discourse analysis.⁴³

⁴³ For a more detailed overview of the study of unexpressed premises, see Gerritsen (2001).

1.3.3 Argument Schemes Characterizing Types of Argumentation

If it is not recognized of which type the argumentation is that is put forward in defense of a standpoint, it is hard to determine whether the argumentation does indeed contribute to the defense of the standpoint. This is because then the critical questions associated with the *argument(ation) scheme(s)* underlying the argumentation will not easily be identified. Take, for instance, the argumentation “He is an athlete” put forward in defense of the standpoint “Scott is sure to be concerned about what he eats.” The arguer may have chosen to support the standpoint that Scott is sure to be concerned about what he eats by this argumentation considering that it is typical of athletes that they care a lot about what they eat, so that this premise can be left unexpressed since it is self-evident. In arguing in this way, the arguer advances “symptomatic” argumentation, which is characterized by the use of a conventionalized argument scheme aimed at bringing about a transfer of acceptance from a premise in which a symptom is mentioned to a standpoint referring to something it is a symptom of. This argument scheme, known as *sign argumentation*, is in this case exemplified in the stereotypical relationship between being an athlete and being concerned about food.

An argument scheme is an abstract characterization of the way in which in a particular type of argumentation a premise used in support of a standpoint is related to that standpoint in order to bring about a transfer of acceptance from that premise to the standpoint. Depending on the kind of relationship that is established in the argument scheme, specific kinds of evaluative questions – usually referred to as *critical questions* – are appropriate to evaluate the argumentation. The critical questions that are associated with an argument scheme capture the specific pragmatic rationale for bringing about the transition of acceptance from the premise to the standpoint. Thus the argument scheme that is used in a specific type of argumentation defines, as it were, how the “internal organization” of the argumentation is to be judged.

Since Chaïm Perelman and Lucie Olbrechts-Tyteca (1969) introduced the concept in 1958 rather informally,⁴⁴ argument schemes have been a crucial concept in argumentation theory. They play a vital role in creating theoretical instruments for analyzing and evaluating argumentative discourse that are to complement, if not replace, the formal validity standard of logic. According to argumentation theorists, it should not be taken for granted that putting forward argumentation always automatically amounts to making an attempt to logically derive a conclusion from certain premises. In their view, in argumentation other means of transmitting acceptance may be pertinent than formal implication, such as the pragmatic principles of argumentation exemplified in the various argument schemes. Therefore, the theoretical definition and categorization of argument schemes, the way in

⁴⁴ Perelman and Olbrechts-Tyteca (1958) spoke of *schèmes argumentatifs* – argumentation schemes in the English translation (1969) of their study.

which they can be identified, and the role that unexpressed premises and *topoi* play in this endeavor are in argumentation theory prominent topics of research.

The topical systems proposed in the classical tradition are part of the classical theories of *invention*. They are aimed at helping arguers in finding (and evaluating) arguments and other argumentative moves. As far as it pertains to argumentation, the classical concept of *topos* corresponds roughly to the modern concept of argument scheme. Aristotle describes dialectical and rhetorical *topoi*. Among the latter he distinguishes between *general topoi*, which are abstract principles of inference that can be used in all genres of discourse, and *specific topoi*, which can be used as bridging devices between premise and thesis in the three oratorical genres that Aristotle distinguished and are more like ready-made statements. Boethius's dialectical *topica* in *De Topicis Differentiis* (1978) can be seen as a synthesis of Aristotle's dialectical topical system and the rhetorical topical system proposed in Cicero's *Topica* (1949).

Richard Whately's (1963) typology of forms of argument, on which the standard classification of types of argumentation in American debate textbooks is based, is influenced by Aristotle's system of rhetorical invention and intended to be a tool for finding arguments (Garssen 1997, p. 118). *Argumentation by Debate*, Austin Freeley's (1993) textbook, distinguishes between "reasoning by example," "reasoning by analogy," "causal reasoning," and "sign reasoning," and other textbook classifications differ not substantially. An innovation is Arthur Hastings's (1962) classification of types of reasoning as types of warrants. Starting from the Toulmin model of argumentation, Hastings describes the most important types of warrants in terms of the reasoning process, "moving from the data to the conclusion on the authority of the warrant" (1962, p. 21). This procedure results in the recognition of three general patterns: "verbal reasoning," "causal reasoning," and "free-floating forms of reasoning." This division is not adopted in the major textbooks on debate, but it constitutes the point of departure for other scholars concentrating on argument schemes, such as Schellens (1985).

In their "new rhetoric," Perelman and Olbrechts-Tyteca (1969) make a distinction between argument schemes based on the principles of "association" and "dissociation." Their argument schemes are actually only based on association, i.e., bringing together elements that were previously regarded as separate. In "You have prepared the food, so you should also enjoy eating it," for instance, having prepared the food and enjoying eating it are brought together by means of an association, viz., an argument scheme "based on the structure of reality." Dissociation, i.e., separating elements that were previously regarded an entity, does not involve the use of argument schemes. Manfred Kienpointner's (1992) typology of argument schemes is aimed at giving a complete description of the types of argument schemes that are used and judged positively in the German language community. His typology consists of an eclectic compilation of all classical and modern classifications just discussed. Starting from a distinction between different types of warrants, Kienpointner distinguishes between three main classes: "warrant-using schemes," "warrant-establishing schemes," and "schemes that neither use nor establish warrants."

In the pragma-dialectical perspective, argument schemes represent pragmatic principles for legitimizing the step from premise to standpoint (van Eemeren and Grootendorst 1992a, pp. 158–168). In evaluating argumentation in which a particular argument scheme is used, one has to check whether the use of this argument scheme is suitable in the communicative context concerned and whether it is applied correctly. The latter means that all relevant critical questions that should be answered for a correct use of the argument scheme can be answered satisfactorily. In this approach, the dialectical rationale for distinguishing between argument schemes is that they come with different critical questions because the premises are in different ways linked to the standpoint. Bart Garssen (1997) established empirically that in response to the use of the various types of argumentation distinguished in pragma-dialectics, ordinary arguers tend to ask critical questions that correspond with the critical questions that are standardly distinguished on theoretical grounds. This outcome indicates that ordinary arguers already have a notion of the types of pragmatic relation between the premise and the standpoint that are captured in the argument schemes.

Douglas Walton (1996) presents a list of 25 *argumentation schemes* for “presumptive reasoning” that play a role when argumentation is subject to rebuttal if relevant contrary evidence becomes available (p. 17). He formulates for most of the schemes critical questions pointing at possibilities for rebuttal. Walton’s list of argumentation schemes is heterogeneous and eclectic: It includes schemes taken from Hastings (1962), Perelman and Olbrechts-Tyteca (1969), and other theorists and includes also fallacious forms of argumentation. In Walton et al. (2008), this list is expanded to 25 schemes, including again fallacious kinds of reasoning. The expanded list is organized under four general headings: (1) schemes for argument from analogy, classification, and precedent; (2) knowledge-related, practical, and other schemes; (3) arguments from generally accepted opinions, commitment, and character; and (4) causal schemes. Some first attempts have been made to formalize these argumentation schemes, and the possibilities of implementing them in computer systems are also explored.⁴⁵

1.3.4 Argumentation Structures as Logical or Functional Entities

If it remains unclear how exactly the reasons advanced in defending a standpoint relate to each other in supporting the standpoint at issue, it cannot be determined whether the argumentation as a whole constitutes a satisfactory defense of the standpoint. For this reason it is necessary to lay bare the *argumentation structure* that characterizes the “external organization” of the argumentation.

⁴⁵ For a more detailed overview of the study of argument schemes, see Garssen (2001); for attempts at formalization and the computational implications, see Walton et al. (2008, Chaps. 11, “Argumentation and Artificial Intelligence” and 12, “Research in Related Disciplines and Non-Anglophone Areas”).

In argumentation theory, various ways of combining reasons have been distinguished that characterize the different kinds of argumentation structures that can be instrumental in defending a standpoint.

Although argumentation theorists agree that it belongs to their task to distinguish between various kinds of argumentation structures, they do not fully agree on the rationale for making the distinctions. Different terminological conventions have been developed for naming the various combinations of reasons, and the divisions are not always exactly the same. Part of the explanation is that in distinguishing between argumentation structures, not all argumentation theorists start from the same perspective. Some argumentation theorists start from a logical perspective on the way in which combinations of reasons manifest themselves in the argumentation resulting from the reasoning process underlying the argumentation. Other argumentation theorists opt for a pragmatic perspective and concentrate on the various kinds of functions that the combinations of reasons fulfill in the argumentative process in which they come into being. This means that, in analyzing the argumentation structure, logic-oriented theorists are out to diagram the logical patterns while pragmatically oriented theorists diagram the functions of the reasons that are advanced in the argumentative exchange.⁴⁶

Formal and informal logicians opt as a rule for a logical or logico-epistemic perspective. Their aim is to map how a combination of premises constituting an argumentation lends logical or logico-epistemic support to a conclusion. Starting in 1973 with Stephen Thomas (1986), they have made a distinction between *linked* argumentation (“reasoning”), in which the reasons (“premises”) that are combined provide interdependent support for the standpoint (“conclusion”) that is defended, and *convergent* argumentation, in which the reasons that are combined support the standpoint independently.⁴⁷ They often associate linked argumentation with “deductive” reasoning and convergent argumentation with “inductive” reasoning (Govier 1992⁴⁸; Fisher 2004),⁴⁹ although some scholars deviate from this pattern (Pinto and Blair 1993). Next to linked and convergent reasoning, informal logicians usually also distinguish *serial* argumentation. In this kind of reasoning, a reason advanced in support of a conclusion is, in its turn, supported by another reason (and this process may repeat itself).

The perspective chosen in the pragma-dialectical approach in analyzing the structure of argumentation is, as might be expected, pragmatic and dialectical. Pragma-dialecticians try to capture in their analysis the ways in which the various reasons put forward in an argumentation function as responses to doubt or criticism

⁴⁶ This characterization of the difference between the two approaches of argumentation structure is based on exchanges we have had with J. Anthony Blair (personal communication).

⁴⁷ Reasons support a standpoint independently if the unacceptability of any of them does not affect the argumentative strength of any of the others.

⁴⁸ Remarkably, Govier (1992) considers also analogies as linked.

⁴⁹ In deductive reasoning the premises need to be taken together to constitute a “defense” of the conclusion, whereas in inductive reasoning, each of the premises plays its own role in making the conclusion more or less probable.

from actual or projected interlocutors.⁵⁰ Frans van Eemeren and Rob Grootendorst (1992a) start from the “basic” argumentation structure of a *single* argumentation, consisting of one explicit “reason” (consisting, as a rule, of a premise and an unexpressed bridging premise) in favor of a standpoint. In their view, “complex” argumentation consisting of more reasons can, analytically, always be broken down into certain combinations of single argumentations, each of the reasons involved in these single argumentations being in a particular way related to the others and the standpoint that is being defended. In *multiple* argumentation, the constituent single argumentations are, in principle, alternative defenses of the same standpoint aimed at responding to different kinds of critical responses. In *coordinative*(ly *compound*) argumentation, the constituent single argumentations constitute one joint defense of the standpoint, because they are interdependent and are, in principle, all necessary for responding conclusively to the other party’s (expressed or anticipated) critical response.⁵¹ In *subordinative*(ly *compound*) argumentation, the defense takes place by putting forward (single or complex) argumentation to support a premise of the argumentation advanced, because a critical response is expressed or anticipated regarding that premise. Francisca Snoeck Henkemans (1992) gives a detailed account of how exactly each of the pragma-dialectical argumentation structures plays a part in actual argumentative exchanges.⁵²

Although the concepts were not yet fully developed, argumentation structures similar to the modern argumentation structures we just discussed were in nascent form already present in both the classical rhetorical tradition and the eighteenth-century Enlightenment rhetoric. The logical approach, in which argumentation structures refer to relationships among premises within different inference types, is prominent in the work of the Enlightenment rhetoricians (e.g., Campbell 1991). The functional approach, in which the requirements of the burden of proof that the arguer has to meet determine the argumentation structure, can be found in both traditions (e.g., stasis theory and Whately 1963, p. 112). Although it does not go back to that long ago, the modern convention to represent the structure of argumentation by means of a diagram was followed already by Monroe Beardsley (1950), who

⁵⁰ Because in the pragma-dialectical theory of argumentation it depends on the doubt and criticism arguers respond to, and the way in which they deal with this doubt and criticism, what the structure of their argumentation will be, this approach can be seen as a sequel of the functional approach chosen in the theory of *stasis* (and continued in the theory of debate).

⁵¹ Within coordinative argumentation put forward to meet criticism concerning the sufficiency of the reasons advanced in defense of a standpoint, a distinction can be made between a “direct” defense, in which the arguer attempts to meet the criticism by adding so many more reasons that together they should suffice, and an “indirect” defense, in which the arguer adds one or more reasons in order to refute counterarguments. In agreement with a suggestion made by Blair and Pinto in an unpublished manuscript, Snoeck Henkemans (1992) calls the argumentation in the first case *cumulative* and in the second case *complementary*.

⁵² Although the various kinds of argumentation structures distinguished in pragma-dialectics are to some extent similar to those distinguished in informal logic, the differences in conceptualization complicate a one-to-one translation of the terminologies of pragma-dialectics and informal logic into each other.

numbered the relevant statements in an argumentation and used arrows to indicate support relationships.⁵³ In addition, Beardsley introduced part of the terminology that informal logicians use to refer to the different argumentation structures.

James Freeman's (1991) approach to argumentation structure is different from that of other informal logicians, because it is based on Toulmin's (2003) theoretical model of argumentation. This procedural model should provide "a rationale for distinguishing different types of argumentative elements and structural configurations" (Freeman 1991, p. 37). According to Freeman, in the basic dialectical situation, the "challenger" of the "respondent" (or "proponent") who has expressed a standpoint ("claim") can ask three types of "basic dialectical" or "argument generating" questions: "acceptability" questions, "relevance" questions, and "ground adequacy" questions. Each of these (dialectical) questions calls for a specific elaboration of the argument by the respondent, and each of these specific elaborations results in a different type of argumentation structure.

In his contribution to the study of argumentation structure, Walton (1996) aims to develop more refined guidelines for identifying convergent and linked argumentation and to rescue and refine the technique of argument diagramming. He proclaims to have taken a pragma-dialectical approach (p. xiv) and to use methods similar to those of Freeman (1991) and Snoeck Henkemans (1992). Walton adopts a functional perspective on the distinction between linked and convergent argumentation, "meaning that it relates to how the premises of an argument function together in supporting the conclusion in a context of dialogue" (Walton 1996, p. 177). In his opinion, the reason why it is in many cases difficult or even impossible to determine categorically whether an argumentation consisting of more reasons is convergent or linked is that "there just isn't enough evidence given to enable us to determine how the argument is being used in the given context" (1996, p. 178). Although this observation is correct, the way in which the reasons advanced in an argumentation hang together and support the standpoint that is defended is in practice often clearly indicated by the use of connecting expressions such as "apart from X, Y" (convergent argumentation), "Y, moreover X" (linked argumentation), and "for, because Y, X" (serial argumentation). In other cases, the content of the arguments sometimes makes clear what the most likely structure of the argumentation is. Otherwise, again, pragmatic information of every kind needs to be explored and put to good use.⁵⁴

1.3.5 Fallacies as Contaminators of Argumentative Discourse

In argumentative discourse, the difference of opinion at issue will not be resolved satisfactorily if contaminators of the argumentative exchange enter the discourse

⁵³ As Blair pointed out to us (personal communication), the American legal theorist Wigmore (1931) introduced argument diagramming already in 1913, long before Beardsley.

⁵⁴ For a more detailed overview of the study of argumentation structures, see Snoeck Henkemans (2001).

that are not detected. Such contaminators, which may be so treacherous that they go unobserved in the argumentative exchange, are known as *fallacies*. Finding ways to detect fallacies is one of the central tasks argumentation theorists are faced with.

In argumentation theory, adequate approaches to the definition of the various kinds of fallacies and appropriate methods for their identification in real-life argumentative practices are to be developed. Virtually every normative theory of argumentation therefore includes a treatment of the fallacies. The degree to which a theory of argumentation makes it possible to give an adequate treatment of the fallacies can even be considered as a litmus test of the quality of the theory.

The theoretical study of fallacies started with Aristotle, who treats them thoroughly the *Topics*, and more in particular in the *Sophistical Refutations*, and also makes valuable observations concerning fallacies in the *Prior Analytics* and the *Rhetoric*. Characteristically, Aristotle places the fallacies in the context of a dialectic in which one person attacks a thesis and another person defends it. He divides the false refutations that can be used in a dialectical context into those that are dependent on language and those independent of language – a distinction that proves not to be without problems. Aristotle's view of fallacies as cases of seemingly valid reasoning that are in fact invalid has remained authoritative for a long time. However, later authors often ignored the dialectical context of the definition.

The most striking addition to the fallacies in Aristotle's list consists of the fallacies known as the *ad fallacies*, such as the *argumentum ad hominem*, a category of arguments first distinguished in 1690 by John Locke (1961). Later the approach to the fallacies in logic textbooks shifts from the Aristotelian dialectical perspective to the perspective of a monologue. Fallacy theory then deals with errors in reasoning instead of deceptive maneuvers made by a party who tries to outwit the other party.⁵⁵ In 1970, Charles Hamblin observes in his influential monograph *Fallacies* such uniformity in contemporary treatments of the fallacies that he speaks of the *Standard Treatment*: "the typical or average account as it appears in the typical short chapter or appendix of the average modern textbook" (p. 12). According to the standard definition of a fallacy going with the Standard Treatment, a fallacy is *an argument that seems valid but is not valid*. A great many of the fallacies treated in the textbooks however are not in agreement with this definition. Hamblin's monograph not only gives a devastating diagnosis of the shortcomings of the Standard Treatment but has also, and in the first place, been a great source of inspiration to argumentation theorists wanting to deal with the fallacies.

Post-Hamblin attempts to create a better alternative to the Standard Treatment differ considerably in their approaches, objectives, methods, and emphases. Inspired by Hamblin's (1970) own contribution to the theory of fallacies, cast in the mold of a system of rules called *formal dialectics*, Jaakko Hintikka (1987), for one, argues in a dialectical vein that the Aristotelian fallacies should not be

⁵⁵ Because some of the fallacies on Aristotle's list are intrinsically linked with the dialogue situation, one of the consequences of abandoning the context of debate is that the reason why a particular fallacy should be regarded as a fallacy may have become obscure.

primarily viewed as wrong inferences but as interrogative mistakes in question dialogues. John Biro and Harvey Siegel's (1992, 1995, 2006), still embryonic, epistemic approach represents a different view of the fallacies as failed attempts to expand our knowledge. Rather than proposing another theoretical approach, Maurice Finocchiaro (1987) makes the methodological recommendation to opt for a middle course between abstract theoretical considerations and data-oriented empirical observations. Hansen and Robert Pinto (Eds., 1995) honor Hamblin by presenting a representative collection of essays on post-Hamblin approaches to the theorizing about fallacies. Their collection shows the active involvement of various contemporary informal logicians and other argumentation theorists in determining the conditions under which a specific argumentative move should count as a fallacy.

Another important contribution to the theoretical study of the fallacies is made by John Woods and Walton (1989). Their remedy for the Standard Treatment is dealing with the various kinds of fallacies by calling on more sophisticated modern logics than just syllogistic, propositional, and predicate logics. Woods and Walton take the view that the fallacy itself should determine how it might be dealt with theoretically. Common methodological starting points of their approach are that fallacies can be usefully analyzed with the help of the theoretical concepts and vocabulary of logical systems, including dialectical systems, and that a successful analysis of a fallacy will in most cases have features that qualify that analysis as *formal* in some sense. Woods and Walton draw in their analyses upon Hamblin's concepts of "commitment stores" and "retraction," which makes their approach not only formally oriented but also dialectical. In their view, it makes no more sense to suppose that the rather different phenomena for historical reasons endowed with the name *fallacy* must all be given a common analysis than it does to suppose that all diseases should be given the same diagnosis and treatment. Another typical feature of the Woods-Walton approach is therefore that it is pluralistic.⁵⁶

In formal dialectic, another approach with a distinct view of the fallacies, a theory of argumentation is envisaged as a finite set of production rules for rational arguments (Barth and Krabbe 1982). Only (and all) arguments that can be generated by these rules are rational arguments. Fallacies can then be analyzed as argumentative moves that cannot be generated by the rules. The pragma-dialectical theory of argumentation set out in *Argumentation, Communication, and Fallacies*, although it links up with formal dialectics, starts from the conviction that the fallacies are best understood as wrong moves in the communication process of argumentative discourse (van Eemeren and Grootendorst 1992a). This means that the logical concern with validity keeps its place, but the single-minded preoccupation with the logical aspects of arguments should be abandoned. Rather than considering the fallacies as belonging to an unstructured list of nominal categories inherited from the past, as happens in the Standard Treatment, or considering all fallacies to be violations of one and the same (validity) norm, as happens in deductivist

⁵⁶ Since the late 1980s, Woods and Walton have gone their separate ways, developing different views regarding the fallacies. See, for instance, Walton (1992b) and Woods (2004).

logico-centric approaches, the pragma-dialectical approach recognizes a functional plurality of norms. The treacherous character of the fallacies is explained by viewing them as derailments of “strategic maneuvering” (that are often hard to detect) in which the boundaries of reasonableness are overstepped (van Eemeren 2010).

Independently of Woods, from the 1980s onward, Walton has made a significant contribution of his own to the theoretical study of the fallacies. In *Informal Fallacies* (Walton 1987), he tackles the problems involved in analyzing fallacies. In this endeavor, he not only makes formal logic subservient to dialectic but also turns to pragmatics in a very broad sense. Along these lines, Walton has continued to publish an astounding number of books devoted to the fallacies (and to other problem areas of argumentation theory). Some of these books deal with theoretical issues; others are specifically devoted to a particular fallacy. Among the latter is, for instance, *Begging the Question: Circular Reasoning as a Tactic of Argumentation* (Walton 1991), in which a pragmatic approach to dialogues is developed that leads to a theory of circular reasoning as an informal fallacy. Circular reasoning is in this approach analyzed as an attempt to evade the burden of proof by blocking the dialogue and depriving the opponent of the opportunity to ask critical questions. In *Slippery Slope arguments* (Walton 1992a), Walton discusses the problems involved in the assessment of slippery slope arguments. In *Commitment in Dialogue*, co-authored by Erik Krabbe (Walton and Krabbe 1995), Walton’s approach has taken a new turn by involving the empirical context of the type of dialogue in which argumentative discourse takes place explicitly in his theorizing about the fallacies.⁵⁷

1.4 Different Theoretical Approaches to Argumentation

Argumentation theory has a long history that goes back to Antiquity. In combination with ancient syllogistic logic (at the time known as *analytic*), ancient dialectic and rhetoric – nowadays generally known as *classical* dialectic and rhetoric – are the forbears of modern argumentation theory. Not only do these disciplines deal with distinct aspects of argumentation in reasoning, discussion, and public address, but also do they provide insights that are still relevant today.

Although we often speak of classical dialectic and rhetoric as if each of them constituted a unified whole, in Greek and Roman Antiquity and the postclassical period, various scholars have made contributions to the development of these disciplines and their views were by no means always in harmony. In order to be accurate, we must in fact indicate more precisely to which views exactly we are referring to. Do we, for instance, refer to Plato’s dialectic or to dialectic as it was defined by Aristotle, to the rhetoric of the sophists, or to the rhetoric of Hermagoras of Temnos? Also when we speak of syllogistic logic, we have to clarify whether we mean the logic proposed by Aristotle or, for instance, to syllogistic logic as

⁵⁷ For a more detailed overview of the study of fallacies, see van Eemeren (2001).

practiced by nineteenth-century logicians. In this introductory chapter, we have to be brief and we will concentrate exclusively on the influential logic, dialectic, and rhetoric of Aristotle.⁵⁸

Central to Aristotle's logic is the distinction between form and substance. Rather than giving a particularistic analysis of the strengths and weaknesses of individual arguments, Aristotle's logic identifies argument patterns that can lead from statements already known to be true to other statements whose truth is yet to be established. These patterns apply universally, so that any content could be substituted for any other content with the same result. The development of modern symbolic logic is a direct response to the concern for formally representing the inferential structure of seemingly acceptable or unacceptable arguments. From Aristotle's logic, the study of argumentation has taken a tradition of analyzing the form of argumentative inference independently of its content.

The Aristotelian concept of dialectic is best understood as the art of inquiry through critical discussion.⁵⁹ Dialectic is a way of putting ideas to a critical test by attempting to expose contradictions in a position and eliminate them: One party puts forward a claim and then provides answers to the other party who acts as a skeptical questioner. While the paradigm case of Aristotle's dialectic is the question and answer technique of the Socratic dialogues, a similar pattern of assertion and assent may also be employed in other kinds of dialogue. In a dialogue that is dialectical in the Aristotelian sense, the adequacy of any particular claim is supposed to be cooperatively assessed by eliciting premises that might serve as commonly accepted starting points, then drawing out implications from those starting points, and determining their compatibility with the claim in question. Where contradictions emerge, revised claims might be put forward to avoid such problems. This method of regimented opposition amounts to a pragmatic application of logic, a collaborative method of putting logic into use so as to move from conjecture and opinion to more secure belief.

Aristotle's rhetoric deals with the principles of effective persuasion leading to assent or consensus. It bears little resemblance to modern-day persuasion theories heavily oriented to the analysis of attitude formation and attitude change but largely indifferent to the problem of the invention of persuasive messages (Eagly and Chaiken 1993; O'Keefe 2002). In Aristotle's rhetoric, the emphasis was on the production of effective argumentation for an audience when the subject matter does not lend itself to a logical demonstration of certainty. When it comes to logical demonstration, the syllogism was the most prominent form; the enthymeme, thought of as an incomplete syllogism whose premises are acceptable to the audience, was its rhetorical counterpart. Enthymemes were usually only partially expressed syllogisms, their logic supposedly being completed by the audience.

⁵⁸ Our brief sketch of Aristotelian logic, dialectic, and rhetoric is largely based on van Eemeren et al. (2010). See [Chap. 2, "Classical Backgrounds"](#) for a more elaborate treatment.

⁵⁹ This does not exclude that persuasion can also be a goal.

In modern times, argumentation theory is in our view often too easily identified exclusively with either “doing logic” or “doing dialectic” or “doing rhetoric.” In the first case, argumentation theory is viewed as just a special part or branch of formal logic. This view is not per se illegitimate but it restricts the scope and range of argumentation theory in ways that are neither necessary nor desirable. Implicitness, for instance, is then a possibility readily abstracted from, so that unexpressed elements are not systematically taken into consideration and certainly not situated in the context of communication. The attention will then concentrate on decontextualized standard forms of linking premises and conclusions and the emphasis will be on those expressions (“logical constants”) that have a special meaning to logicians.⁶⁰

Similar observations can be made against viewing argumentation theory as merely doing dialectic or rhetoric.⁶¹ In the case of doing just dialectic, there is a considerable risk that all kinds of relevant contextual and situational factors will be left out of consideration. In the case of doing rhetoric, this danger does not exist, but then there is a considerable risk that the critical dimension of argumentation will not be explored to the full. We therefore think that argumentation theory can best be viewed as an interdisciplinary study in its own right with logical, dialectical, and rhetorical dimensions that are to be nourished by the combined efforts of philosophers, logicians, linguists, discourse analysts, communication scientists, rhetoricians, psychologists, lawyers, and all others who have something to contribute that is theoretically pertinent.

As yet, there is no unitary theory of argumentation that encompasses the logical, dialectical, and rhetorical dimensions of argumentation and is universally accepted. The current state of the art in argumentation theory is characterized by the coexistence of a variety of theoretical perspectives and approaches, which differ considerably from each other in conceptualization, scope, and theoretical refinement. Some argumentation theorists have a goal that is primarily (and sometimes even exclusively) descriptive, especially those theorists having a background in linguistics, discourse analysis, and rhetoric. They are interested, for instance, in finding out how in argumentative discourse speakers and writers try to convince or persuade others by making use of certain linguistic devices or by using other means to influence their audience or readership. Other argumentation theorists, often inspired by logic, philosophy, or insights from law, study argumentation primarily for normative purposes. They are interested in developing soundness criteria that argumentation must satisfy in order to qualify as rational or reasonable. They examine, for instance, the epistemic function argumentation fulfills or the fallacies that may occur in argumentative discourse. Although in argumentation theory the

⁶⁰ According to Berger (1977, p. 3), logicians usually define arguments in the first place as lists of sentences, one of which is regarded as the conclusion and the rest as the base for that conclusion. Argumentation theorists claim that there is more to argumentation.

⁶¹ Schiappa (2002), for one, confesses that he identifies argumentation theory with doing rhetoric and that he finds it hard to differentiate between the two.

two extremes of these lines of research are indeed represented, most argumentation theorists seem to recognize that argumentation research has a descriptive as well as a normative dimension, so that in argumentation theory both interests must be combined.

Although this is not always explicitly acknowledged, it is clear that most modern approaches to argumentation are strongly affected by the perspectives on argumentation developed in Antiquity. Both the dialectical perspective (which nowadays usually incorporates the logical dimension) and the rhetorical perspective are represented prominently. Approaches to argumentation that are dialectically oriented tend to focus primarily on the quality of argumentation in defending standpoints in regulated critical dialogues. They put an emphasis on guarding the reasonableness of argumentation by regimentation. It is noteworthy that in the rhetorically oriented approaches to argumentation, putting an emphasis on factors influencing the effectiveness of argumentation effectiveness is usually viewed rather as a “right to acceptance” speakers or writers are, as it were, entitled to on the basis of the qualities of their argumentation than in terms of actual persuasive effects. Research that is indeed aimed at examining the actual effectiveness of argumentation is usually called *persuasion research*. In practice, persuasion research generally amounts to quantitative empirical testing of the ways in which argumentation (and other means of persuasion)⁶² may lead to changes of attitude in the recipients.

In modern argumentation theory, a remarkable revival has taken place of both dialectic and rhetoric. Unlike in Aristotle’s approach, however, there is a wide conceptual gap between the two perspectives on argumentation, going together with a communicative gap between their protagonists. This double gap is probably a consequence of the separation between the two perspectives that took place in the sixteenth and seventeenth century and resulted in an ideological division of two mutually isolated paradigms generally seen as contradictory. In recent times, some argumentation scholars have come to the conclusion that the dialectical and rhetorical views on argumentation are not per se incompatible.⁶³ They may even complement each other, so that the sharp division requires weakening. It has even been argued that re-establishing the link between dialectic and rhetoric will enrich the analysis and evaluation of argumentative discourse.⁶⁴ According to this view, combining the different kinds of insights gained by taking the two perspectives leads to a better and more complete understanding of argumentative discourse.

As an introduction to our discussion in the following chapters of the various theoretical approaches to argumentation that are currently prominent, we shall

⁶² An important impetus to the empirical study of argumentation in persuasion research is given by Daniel O’Keefe. He tested experimentally the recognition of argumentative moves and used more recently “meta-analysis” to check the validity of certain theoretical claims made by argumentation theorists (O’Keefe 2006).

⁶³ See, for instance, the essays concerning the relationship between the two perspectives collected in *Dialectic and Rhetoric* (van Eemeren and Houtlosser, Eds., 2002).

⁶⁴ See van Eemeren (2010) and the literature discussed in Chapter 3 of that monograph.

now give a brief overview of these approaches, paying some attention in our discussion to the way they deal in their outlooks with the classical heritage. Before turning to theoretical approaches that were developed more recently, we first turn to two “neoclassical” approaches developed in the 1950s, which are known as the *Toulmin model* and the *new rhetoric*. Both approaches are aimed at developing an argumentation theory which is to counterbalance in dealing with argumentation the formal approach that modern logic provides for dealing with analytic reasoning.

In *The Uses of Argument*, first published in 1958, Toulmin (2003) reacted against the then dominant logical view that argumentation is just another specimen of the reasoning that the formal approach is qualified to deal with. As an alternative, Toulmin (2003) presented a model of the “procedural form” of argumentation. This model aims to capture the functional elements (or steps) that can be distinguished in the defense of a standpoint by means of argumentation. The procedural form of argumentation is, according to Toulmin, “field-independent,” meaning that the steps that are taken – as they are represented in the model – are always the same, irrespective of the subject that is being discussed. It is noteworthy that Toulmin’s model of the argumentative procedure is in fact conceptually equivalent to the extended syllogism known in Roman-Hellenistic rhetoric as *epicheirema*.

In judging the validity of argumentation, Toulmin gives the term *validity* a different meaning than it has in formal logic. In his view, the validity of argumentation is primarily determined by the degree to which the (usually implicit) *warrant* that connects the *data* advanced in the argumentation with the *claim* at issue is acceptable – or, if challenged, can be made acceptable by a *backing*. What kind of backing may be required in a particular case depends on the field to which the standpoint at issue belongs. In justifying an ethical claim, for instance, a different kind of backing will be required than in justifying a legal claim. This means that the criteria used in evaluating the validity of argumentation are in Toulmin’s view “field-dependent.” Thus, Toulmin puts the validity criteria for argumentation in an empirical and historical context.

In their monograph *The New Rhetoric*, also first published in 1958, Perelman and Olbrechts-Tyteca (1969) regard argumentation – in line with classical rhetoric – as sound if it adduces or reinforces assent among the audience to the standpoint at issue. The soundness of argumentation is in the new rhetoric measured against its effectiveness with the target group. This target group may be a “particular” audience addressed by the speaker or writer that consists of a specific person or a group of people, but it can also be the “universal” audience, the kind of (real or imagined) audience that, in the arguer’s view, embodies reasonableness.

Besides an overview of the elements of agreement that can in argumentation serve as points of departure (facts, truths, presumptions, values, value hierarchies, and *topoi*⁶⁵), Perelman and Olbrechts-Tyteca provide an overview of argument

⁶⁵ Perelman and Olbrechts-Tyteca use the Latin equivalent *loci*.

schemes that can be used in the layout of argumentation to convince or persuade an audience. The argument schemes they distinguish remain for the most part close to the classical topical tradition. They hold that argumentation can have a *quasi-logical* (or quasi-mathematical) argument scheme but also an argument scheme that is *based on the structure of reality* or an argument scheme that *structures reality*. Apart from argumentative techniques of “association,” in which these argument schemes can be employed, Perelman and Olbrechts-Tyteca also distinguish an argumentative technique of “dissociation.” Dissociation divides an existing conceptual unity (e.g., “vanity”) into two separate conceptual unities (e.g., the original concept of “being vain” and the new concept of “loving beautiful clothes”).

In spite of the obvious differences between Toulmin’s approach to argumentation and that of Perelman and Olbrechts-Tyteca, there are also some striking commonalities. Starting from a philosophical background and an interest in the justification of views by argumentative discourse, both emphasize that values play a part in argumentation, both reject formal logic as a theoretical tool for dealing with argumentation, and both turn to juridical procedures for finding an alternative model. A theoretical connection between the Toulmin model and Perelman and Olbrechts-Tyteca’s new rhetoric could even be made by viewing the various points of departure distinguished in the new rhetoric as representing different types of data in the Toulmin model and its argument schemes as different types of warrants or backings.

In addition, both approaches are imbued with notions and distinctions that can already be found in classical rhetoric. This applies not only to the similarity between Toulmin’s model and the Ciceronian *epichereima* but also to that between the role of warrants and backings and that of the classical *topoi*. In the case of the new rhetoric, the crucial role of the audience in the classification of the starting points is strikingly similar to the way in which it is envisaged in classical rhetoric. Moreover, the types of argumentation covered by the argument scheme based on the structure of reality are for the most part reminiscent of those treated in Aristotle’s *Topics*. In addition, the distinction between this argument scheme and that of structuring reality runs parallel with the classical distinction between rhetorical syllogisms and rhetorical induction. All in all, the general goals of the new rhetoric agree well with those of classical rhetoric, albeit that the classical rhetorical systems tended to be primarily used as heuristics.

Of all the approaches to argumentation that have been developed more recently, *formal dialectic*, coined and instigated by Hamblin (1970), remains closest to formal logic, albeit logic in a dialectical garb. The scholars responsible for the revival of dialectic in the second part of the twentieth century treat argumentation as part of a formal discussion procedure for resolving a difference of opinion by testing the tenability of the “thesis” at issue against challenges. Apart from the ideas about formal dialectic articulated by Hamblin, in designing such a procedure, they make use of the “dialogue logic” of the Erlangen School (Lorenzen and Lorenz 1978) but also from insights advanced by Rupert Crawshaw-Williams (1957) and Arne Næss (1966). The most complete proposal was presented by Else Barth and

Erik Krabbe (1982) in *From Axiom to Dialogue*. Their formal dialectic describes systems for determining by means of a regimented dialogue game between the proponent and the opponent of the thesis whether the proponent's thesis can be maintained given the premises allowed as "concessions" by the opponent. By skillfully exploiting the opponent's concessions, the proponent attempts to bring the opponent in a position of self-contradiction. If the proponent succeeds, the thesis has been successfully defended *ex concessis*.

Building on the proposals for a dialogue logic made by the Erlangen School, Barth and Krabbe's formal dialectic offers a translation of formal logical systems into formal rules of dialogue. In *Commitment in dialogue*, Walton and Krabbe (1995) integrate the proposals of the Erlangen School with the more permissive kind of dialogues promoted in the dialectical systems proposed by Hamblin (1970). After having provided a classification of the main types of dialogue, they discuss the conditions under which commitments should be maintained or may be retracted in argumentation without violating any of the rules of the type of dialogue concerned. In Walton and Krabbe's approach, commitments are defined in such a way that arguers can retract their commitments in some cases, but not in others. Formal and dialectical approaches related to this approach can be found in some of the proposals made by the formal and informal logicians we are now going to discuss.

Out of dissatisfaction with the treatment of argumentation in logical textbooks, and inspired by the Toulmin model and to a much lesser extent the new rhetoric, a group of Canadian and American philosophers have propagated since the 1970s an approach to argumentation that is known as *informal logic*. The label *informal logic* refers to a collection of logic-oriented normative approaches to the study of reasoning in ordinary language which remain closer to the practice of argumentation than is usually the case in formal logic. Informal logicians aim in the first place at developing adequate norms for interpreting, assessing, and construing argumentation. Since 1978, the journal *Informal Logic*,⁶⁶ started and edited by Anthony Blair and Ralph Johnson, has been the speaking voice of informal logic and the connected educational reform movement dedicated to "critical thinking."

In *Logical Self-Defense*, Johnson and Blair (2006) have indicated what they have in mind when they speak of an informal logical alternative to formal logic. In this textbook they explain that the premises of an argument have to meet the criteria of "acceptability," "relevance," and "sufficiency." In the case of acceptability, the question is whether the premises that are used in an argument are true, probable, or in some other way trustworthy. In the case of relevance, the question is whether there is a pertinent substantial relation between the premises and the conclusion of the argument. In the case of sufficiency, the question is whether the premises provide enough evidence for the conclusion. Other informal logicians have adopted these three criteria, albeit sometimes under slightly different names (e.g., Govier 1987).

⁶⁶ At first named *Informal Logic Newsletter*.

In *Acceptable Premises*, Freeman (2005) provides, from an epistemological perspective on informal logic, the first comprehensive theory of premise acceptability. Generally, however, informal logicians remain in the first place interested in the premise-conclusion relations in arguments (Walton 1989). Most of them maintain that argumentation should be valid in some logical sense, but generally they do not stick to the formal criterion of deductive validity. In their studies of the fallacies, which are collected in *Fallacies*, Woods and Walton (1989) opt for a logical approach that is formal in a broader sense. In their view, each fallacy requires its own theoretical treatment, which leads them to applying a variety of logical systems in their theoretical treatment of the fallacies.

Johnson (2000) also takes an approach that is predominantly logical, but in *Manifest Rationality* he complements this approach with a “dialectical tier.” In Finocchiaro’s contributions to informal logic, too, the logical and the dialectical approaches are combined, albeit that the emphasis is more strongly on the dialectical dimension, and historical and empirical dimensions are added (e.g., Finocchiaro 2005). Some other informal logicians are searching in other directions for appropriate alternatives. Often the Toulmin model is their first source (e.g., Freeman 1991). The rhetorical perspective and the views Perelman and Olbrechts-Tyteca’s advanced in their new rhetoric have received less attention from informal logicians. A notable exception is Christopher Tindale, who turns in *Acts of Arguing* (1999), and in *Rhetorical Argumentation* (2004), emphatically to rhetorical insights.

In modern times, the study of rhetoric has fared considerably better in the United States than in Europe. Not only has classical rhetoric from the nineteenth century onward been represented in the academic curriculum, but also has the development of modern rhetorical approaches been more prolific. At first sight, Kenneth Burke’s (1966) influential twentieth-century definition of rhetoric as “the use of words by human agents to form attitudes or to induce actions in other human agents” comes close to the traditional definitions concentrating on “persuasion.” A change, however, is that Burke views persuasion as a result of “identification.” To him, identification is a requirement of persuasion. Still, the argumentative view which connects rhetoric with the ability to find the appropriate means of persuasion remains predominant and is by many considered as paradigmatic.

In the last decades of the twentieth century, the image that rhetoric had acquired of being irrational and even anti-rational has been revised. Paying tribute to Perelman and Olbrechts-Tyteca’s new rhetoric, in various countries various scholars have argued for a rehabilitation of the rhetorical approach. In spite of the unlimited extension in the United States in the 1960s of the scope of rhetoric to Big Rhetoric “to the point that everything, or virtually everything, can be described as ‘rhetorical’” (Swearingen and Schiappa 2009, p. 2), Joseph Wenzel (1987) emphasized the rational qualities of rhetoric. In France, Olivier Reboul (1990) argued at about the same time for giving rhetoric its rightful position in the study of argumentation beside dialectic. He saw rhetoric and dialectic as different disciplines, which display some overlap. Rhetoric applies dialectic to public discussions, while dialectic is at the same time part of rhetoric because it provides rhetoric with intellectual tools. In Germany, Josef Kopperschmidt (1989) argued

that, viewed from a historical perspective, rhetoric is the central concern of argumentation theorists.

Although all of them may be described as rhetoricians in the broad sense, the American scholars from the field of (speech) communication who are currently engaged in argumentation theory do not share a clearly articulated joint perspective. Their most obvious common feature is a concern with the connection between claims and the people engaged in some kind of argumentative practice. David Zarefsky (1995) defines this common characteristic as “the practice of justifying decisions under conditions of uncertainty.” This view of argumentation as a practice contrasts sharply with the analytic view of argumentation as a logical structure. It was inspired by the American debate tradition, which started in colleges and universities in the late nineteenth century. In the early and middle years of the twentieth century, connections were made with classical rhetorical theory, which led to a debate tradition dominated by the paradigm of “stock issues.”

An influential departure from this tradition was Douglas Ehninger and Wayne Brockriede’s (1963) book *Decision by Debate*. Making use of the Toulmin model, Ehninger and Brockriede present a debate as a fundamentally cooperative rather than competitive instrument for making critical decisions. This view led in the late 1970s and early 1980s to the proposal of several paradigms or models of debate, the traditional “stock-issues model” taking its place among the alternatives. The debate tradition has had an enormous influence on American argumentation studies. Even Dale Hample’s (2005) *Arguing*, which deals for the most part with argument production, can be seen as one of its descendants.

More or less outside the immediate debate tradition, there has always been a considerable group of scholars in the United States who continued to approach argumentation from the perspective of classical rhetoric, taking account of insights from the new rhetoric in the process. Among them are, next to Zarefsky (2006, 2009), Michael Leff (2003) and Edward Schiappa (2002), each of whom has also contributed profound historical rhetorical analyses. Jeanne Fahnestock (1999, 2009) dealt theoretically with rhetorical figures and stylistics in a way that is relevant to the analysis of argumentation in science. A separate trend affecting argumentation studies in American communication research that needs to be mentioned is the revival of “practical philosophy,” which harks back to the classical concept of *phronesis* – practical wisdom in a given case.

In the United States, Second World War studies on persuasion and attitude change gave a significant boost to the social science approach to communication, which seeks to produce general and testable statements about communication rather than shed light on significant individual cases. This approach promotes descriptive and empirical research rather than normative reflection. In the 1970s, the social approach was brought to bear on argumentation studies by a group of scholars united by their commitment to “constructivism.” Defining argumentation as an interaction of people who maintain what they construe to be incompatible claims, Charles Willard (1983) started to develop a constructivist theory of argumentation. Lloyd Bitzer (1968) was among the scholars who came to see the enthymeme as a communicative act and considered rhetorical proof as a joint creation of speaker and listener.

Concentrating on the public features of communicative acts, Sally Jackson and Scott Jacobs (1982) initiated a research program for studying argumentation in informal conversations. Their joint research is aimed at understanding the reasoning processes by which individuals actually make inferences and resolve disputes in ordinary conversation. A related empirical angle in American argumentation research consists in the study of argument in natural settings, such as school board meetings, counseling sessions, and public relations campaigns, to produce “grounded theory” – a theory of the specific case.

A Toulminian concept that has strongly influenced American argumentation scholarship is the notion of “field.” In *Human Understanding*, Toulmin (1972) describes fields as “rational enterprises,” which he equates with intellectual disciplines, and explores how the nature of reasoning differs from field to field. This treatment led to vigorous discussion about what defines a “field of argument:” subject matter, general perspective, worldview, or the arguer’s purpose – to mention just a few of the possibilities. The concept of fields of argument encouraged recognition that the soundness of arguments is not something universal and necessary, but context-specific and contingent. The renewed interest in fields was another step in resituating the study of argument within the rhetorical tradition. Instead of asking whether an argument is sound, the questions became “Sound for whom?” and “Sound in what context?” The core idea is that the grounds for knowledge claims lie in the epistemic practices and states of consensus in knowledge domains.

In the late 1960s, Robert Scott (1967) contributed further to the emerging belief that truth is relative to the context of argument and to audience by promoting studies of the sorts of knowledge that are rhetorically constructed and how arguing produces knowledge. Instead of the term *fields*, Thomas Goodnight preferred the term *spheres*, referring to “the grounds upon which arguments are built and the authorities to which arguers appeal” (1982, p. 216). Goodnight uses “argument” to mean interaction based on *dissensus*, so that the grounds of arguments lie in doubts and uncertainties. In a similar vein as Jürgen Habermas (1984), Goodnight distinguishes between three spheres of argument: the “personal” (or “private”) sphere, the “public” sphere, and the “technical” sphere. This triad stresses differences between arguments whose relevance is confined to the arguers themselves, arguments that are meaningful for people in general, and arguments whose pertinence extends to a specialized or limited community (Goodnight 2012).

Another force that has shaped the nature of argumentation studies in communication research in the United States in the past decades is social and cultural critique. The intellectual underpinning of argument-as-critique is “postmodernism” in one of its many varieties. The most extreme variety of this perspective is the denial that there can be any such thing as communal standards or norms for argumentation and the claim that what passes for such a standard is always socially constructed. If it is only the interests of the powerful in a group or society that define the communal standards, the goal of argument-as-critique is to expose this practice and suggest alternatives that bring those who were excluded or marginalized into the process of deliberation.

Meanwhile, starting in the 1970s, in Europe a descriptive approach has been developed in which argumentation is viewed as a linguistic phenomenon in the sense that it not only manifests itself in language use but is even inherent in most language use. In a number of publications (almost exclusively in French), the protagonists of this approach, Oswald Ducrot and Jean-Claude Anscombre, have presented a linguistic analysis to show that almost all verbal utterances lead the listener or reader – often implicitly – to certain conclusions, so that their meaning is crucially argumentative. In *L'argumentation dans la langue* (Anscombre and Ducrot 1983), they refer to the theoretical position they adopt as *radical argumentativism*.

The approach Ducrot developed in collaboration with Anscombre is characterized by a strong interest in words that can serve as argumentative “operators” or “connectors,” giving linguistic utterances a specific *argumentative force* and *argumentative direction* (e.g., “only,” “no less than,” “but,” “even,” “still,” “because,” “so”). A word such as “but,” for instance, determines, independently of the content of what is said, the direction of the conclusion that is suggested. Whatever conclusion a specific context allows to be drawn, the presence of the word “but” causes this conclusion to be the opposite of, and also stronger than, the conclusion to be drawn from the part of the sentence preceding “but.” An explicit connection with rhetoric is that the opposite standpoint suggested by “but” selects an “argumentative principle” that is different from the argumentative principle that is operative in the preceding part of the sentence. Anscombre (1994) observes that the argumentative principles that are at issue here are on a par with the *topoi* from classical rhetoric. In the context in which “but” is used, the *topos* suggested after “but” has a bigger argumentative force than the *topos* suggested earlier; the argumentative force suggested earlier is, as it were, put aside – “overruled” – by the argumentative force suggested later. The *topos* suggested after “but” therefore determines the argumentative direction of the sentence. In “Paul is handsome, but he is gay,” for example, when said to a woman considering trying to get Paul as a partner, the use of “but” leads to the implicit conclusion “It is no use going after Paul.”

It has become a tradition among a substantial group of European researchers, based primarily in the French-speaking world, to approach argumentation from a descriptive linguistic angle. Some of them continue the approach started by Ducrot and Anscombre. Others, such as Christian Plantin (1996) and Marianne Doury (1997), build on this approach but are also – and often more strongly – influenced by conversation analysis and discourse analysis. Another productive approach mainly discussed in French is *natural logic* as envisaged by Jean-Blaise Grize (1982) and his collaborators in Neuchâtel (Borel et al. 1983). Natural logic is not so much linguistically oriented but psychologically and epistemologically. Its protagonists are in the first place influenced by insights developed by Piaget concerning the stages of development that can be distinguished in the thinking of children and in particular by his general concept of an “action scheme” (Piaget and Beth 1961, p. 251).

Other researchers based in Switzerland, stemming from an Italian background, such as Eddo Rigotti (2009), Andrea Rocci (2009), and Sara Greco Morasso (2011),

favor a linguistic approach but allow also for normativity. They combine their linguistic approach with insights from other approaches, such as pragma-dialectics.

The pragma-dialectical theory of argumentation developed in Amsterdam by Frans van Eemeren and Rob Grootendorst combines a dialectical and a rhetorical perspective on argumentation and is both normative and descriptive. The research team was later extended with Agnès van Rees, Francisca Snoeck Henkemans, Peter Houtlosser, Eveline Feteris, Bart Garssen, and others. As van Eemeren and Grootendorst (1984) explain in *Speech Acts in Argumentative Discussions*, pragma-dialecticians view argumentation as part of a discourse aimed at resolving a difference of opinion on the merits by methodically testing the acceptability of the standpoints at issue. The dialectical dimension of the approach is inspired by normative insights from critical rationalism and formal dialectics, and the pragmatic dimension by descriptive insights from speech act theory, Gricean pragmatics, and discourse analysis. In order to be able to combine the dialectical and the pragmatic dimensions systematically, pragma-dialecticians start from four meta-theoretical points of departure. The first is that in argumentative discourse, communication takes place functionally through speech act performances (*functionalization* of the research object). The second is that the ways in which positions with regard to the other party's standpoints and criticisms and defenses of standpoints are conveyed can be accounted for by extending the speech act perspective socially to the level of interaction (*socialization*). The third is that the commitments acquired in argumentative discourse can be externalized by identifying the communicative and interactional obligations created by the speech acts performed (*externalization*). The fourth is that a dialectical regimentation of argumentative discourse can be achieved by designing an ideal model for a regulated exchange of speech acts in a critical discussion (*dialectification*).

The various stages argumentative discourse must pass through to resolve a difference of opinion on the merits by a critical exchange of speech acts are in the pragma-dialectical theory laid down in an ideal model of a critical discussion. Viewed analytically, there should be a "confrontation stage," in which the difference of opinion comes about, an "opening stage" in which the procedural and material point of departure of the discussion is determined, an "argumentation stage" in which the standpoints at issue are defended against any criticism that is advanced, and a "concluding stage" in which it is determined what the result of the discussion is. The model of a critical discussion also defines the nature and the distribution of the speech acts that have a constructive role to fulfill in the various stages of the resolution process. In addition, the standards of reasonableness authorizing the performance of particular speech acts in the various stages of a critical discussion are laid down in a set of dialectical rules for critical discussion. These rules range from the Freedom Rule in the confrontation stage, prohibiting either party from preventing the other party from expressing any position this party wishes to take, to the Concluding Rule in the concluding stage, prohibiting either party from misrepresenting the result of the discussion (van Eemeren and Grootendorst 2004). Any violation of any of the rules for critical discussion, in whatever stage it occurs, amounts to making an argumentative move that is an impediment to the resolution of a difference of opinion on the merits and is therefore fallacious in this

sense. In this way, the use of the term *fallacy* is systematically connected with the rules for critical discussion (van Eemeren and Grootendorst 1992a).⁶⁷

Because in argumentative reality argumentative discourse generally diverges for various reasons from the ideal of a critical discussion, pragma-dialecticians hold that in the analysis of the discourse, a reconstruction is required to achieve an *analytic overview* of all those, and only those, speech acts that play a potential part in resolving a difference of opinion on the merits. In *Reconstructing Argumentative Discourse*, van Eemeren et al. (1993) emphasize that the reconstruction should be guided by the theoretical model of a critical discussion and should be faithful to the commitments that may be ascribed to the arguers on the basis of empirical observations concerning their contributions to the discourse. By means of qualitative and quantitative empirical research, more insight has been gained into potential clues for identifying particular argumentative moves (van Eemeren et al. 2007). Because the reconstruction of argumentative discourse as well as its evaluation can be more pertinent, more precise, and also better accounted for if, next to the maintenance of dialectical reasonableness, the simultaneous pursuit of rhetorical effectiveness is taken into account, van Eemeren and Houtlosser (2002b) developed the notion of *strategic maneuvering*. This notion makes it possible to integrate relevant rhetorical insights systematically in a pragma-dialectical analysis and evaluation of argumentative discourse as it manifests itself in the various kinds of “communicative activity types” that can be distinguished in argumentative reality (van Eemeren 2010).

1.5 Overview of the Contents of this Study

Depending on the perspective on argumentative discourse and the angle of approach chosen as the theoretical point of departure the problems involved in the analysis, evaluation and production of argumentative discourse are dealt with rather differently in argumentation theory.⁶⁸ The state of the art in argumentation

⁶⁷ The extent to which the rules for critical discussion are capable of dealing with the defective argumentative moves traditionally designated as fallacies is viewed as a test of their “problem-solving validity.” For experimental empirical research of the “intersubjective acceptability” of the rules for critical discussion that lends them “conventional validity,” see van Eemeren et al. (2009).

⁶⁸ The infrastructure of the field of argumentation theory in terms of academic associations, journals, and book series reflects to some extent the existing division in theoretical perspectives. The American Forensic Association (AFA), which is associated with the National Communication Association, and its journal *Argumentation & Advocacy* concentrate on argumentation, communication, and debate. The Ontario Society for the Study of Argumentation (OSSA), the Association for Informal Logic and Critical Thinking (AILACT), and the electronic journal *Informal Logic* focus on informal logic. The International Society for the Study of Argumentation (ISSA), the journals *Argumentation* and *Journal of Argumentation in Context*, and the accompanying book series *Argumentation Library* and *Argumentation in Context* aim to cover the whole spectrum of argumentation theory. Other international journals relevant to argumentation theory are *Philosophy and Rhetoric*, *Logique et Analyse*, *Argument and Computation*, *Controversia*, *Pragmatics and Cognition*, *Argument and Computation*, and *Cogency*.

theory can therefore best be described by providing a survey of the various theoretical perspectives and approaches, with an emphasis on those perspectives and approaches that are most elaborate and most influential. This is exactly what we shall do in the following chapters.

In our survey, we first discuss the historical background in the logical, dialectical, and rhetorical theories developed in Antiquity that all modern theoretical approaches to argumentation have in common. We next complement our sketch of their theoretical background with a discussion of some postclassical developments, in particular in the middle of the twentieth century, which are to some extent constitutive for the current state of the art in the field. Special attention will be given to Toulmin's model of argumentation and Perelman and Olbrechts-Tyteca's new rhetoric, because they have played a pivotal role in stimulating the present revival of argumentation theory as a discipline. Then we turn to the various prominent theoretical approaches that determine together the current state of affairs in argumentation theory.

The differences between the theoretical approaches that can be distinguished in argumentation theory depend on the disciplinary backgrounds of the theorists concerned and the philosophies of reasonableness underlying their approach. More in particular, they depend on the specific views these theorists have of the definition and role of the rational judge who judges reasonably. Some theorists see this judge in a purely descriptive fashion as the actual audience to which the argumentation is addressed, while others view the judge normatively as an abstract representation of reasonableness that is to be defined analytically. Still others take a middle position, regarding the two conceptions of reasonableness as complementary or thinking that they are connected, or ought to be connected, with each other. It is usually the disciplinary background of the theorists that determines whether their objective is primarily to gain a better understanding of argumentation or whether they are out to realize diagnostic and therapeutic purposes. This disciplinary background determines in general also whether they will opt for a formal, pragmatic, or some other kind of substantiation of their empirically or analytically based definitions of the validity standards a reasonable judge is supposed to use in judging the point of departure and layout of argumentation. In principle, even the terminology used by the argumentation theorists to refer to their self-chosen standard of reasonableness is determined by their disciplinary background: *logical validity*, *pragmatic validity*, *soundness*, *appropriateness*, and *correctness* (or some other fitting denominator).

Every fully fledged theoretical approach to argumentation that can be distinguished in argumentation theory represents in fact a particular specification of what it means for a rational judge to judge reasonably and provides a definition of (crucial aspects of) the favored type of validity.⁶⁹ For our present purposes, it is

⁶⁹ It is the argumentation theorists' task to specify the criteria a rational judge needs to apply in evaluating argumentation. As no one holds the monopoly for the use of the term *valid* or any of its equivalents, they can give these terms the meaning they think to agree best with their theoretical approach.

important to note that the rational judge who judges reasonably can take various shapes and is represented by, or projected in, various kinds of (concrete or abstract) audiences. In describing the theoretical approaches to argumentation prevailing in argumentation theory, we shall pay attention not only to the conception of reasonableness these approaches give substance to but also to their logical, dialectical, or rhetorical pedigree, their descriptive or normative ambition, and the components of the general research program of argumentation theory they concentrate on. In our discussion of the various approaches, we shall as a rule stick to the terminology used by the protagonists of these approaches. In cases in which the terminology or the meaning given to certain terms deviates from the way in which they are introduced in this introductory chapter, we shall note this and give a translation when this seems helpful.

The *Handbook of Argumentation Theory* is meant to be a tool assisting students in finding their way in argumentation theory. After this general introduction of the field, the remaining chapters will therefore be devoted to providing a more detailed overview of the current state of the art by discussing the most prominent theoretical approaches to argumentation. We start with treatments of the classical backgrounds of argumentation theory in Antiquity and its postclassical backgrounds in modern times. Next we explain the “neoclassical” approaches of Toulmin and Perelman and Olbrechts-Tyteca, which stimulated the revival of argumentation theory after the Second World War. The discussion of the “Toulmin model” and the “new rhetoric” is followed by a treatment of the more recent formal dialectical approaches, informal logic, American communication and rhetoric, the linguistically oriented approaches, pragma-dialectics, and argumentation and artificial intelligence. To conclude our overview, we pay attention to some research traditions which are close to argumentation theory but not part of it and to the development of argumentation theory in parts of the world where English is not the main language of publication. To further assist students of argumentation, we have supplemented our alphabetical bibliography of all publications referred to with a classified bibliography listing systematically the literature pertaining to the various theoretical approaches.

In Chap. 2, “Classical Backgrounds”, we provide an overview of the classical backgrounds of argumentation theory in Antiquity. The historical roots of argumentation theory in Aristotelian dialectic and fallacy theory, classical syllogistic and propositional logic, and Greek and Roman-Hellenistic rhetoric are illustrated by discussing insights from Zeno, the Sophists, Plato, Isocrates, Aristotle, the Stoics, Hermagoras of Temnos, Cicero, Quintilian, Boethius, and others that are still relevant to present-day argumentation theory. We conclude the chapter with a short description of the development of dialectic, logic, and rhetoric in the Middle Ages and the Renaissance and their influence on present-day argumentation theory.

In Chap. 3, “Post-classical Backgrounds”, we discuss some postclassical backgrounds of argumentation theory. First, we illustrate by means of an example the difference between a logician’s abstract way of dealing with argument and reasoning and the interests of an argumentation theorist. Then we continue giving a survey of the different conceptions of validity in logic: both the semantic

conceptions and the syntactic ones, here represented by natural deduction (the pragmatic ones are treated in [Chap. 6, “Formal Dialectical Approaches”](#)). Next we discuss the history of the study of fallacies by going into the reception of the Aristotelian heritage in the study of fallacies and explaining the traditional views of some notorious fallacies originating in theoretical observations by Locke and Whately. We also discuss the so-called Standard Treatment and Hamblin’s criticism of it. After that we move on to three important forerunners or pioneers of modern argumentation theory by discussing Crawshaw-Williams’s analysis of controversy, Næss’s insights concerning the clarification of discussions, and Barth’s dual approach to logical validity.

In [Chap. 4, “Toulmin’s Model of Argumentation”](#), we concentrate on Toulmin’s model for argumentation analysis. Together with Perelman and Olbrechts-Tyteca’s new rhetoric, this model set the stage for the development of argumentation theory in the next 50 years. In our explanation of the Toulmin model, we discuss Toulmin’s ideas concerning analytical and substantial reasoning, concerning the relation between the form of argumentation and validity, and concerning field-invariance and field-dependency. In discussing the reception of the model, we not only mention various applications of Toulmin’s model but also pay attention to the ways in which the model has influenced further theorizing in argumentation theory.

In [Chap. 5, “The New Rhetoric”](#), we concentrate on the new rhetoric developed by Perelman and Olbrechts-Tyteca. We first introduce the authors and describe their intellectual background as well as the general characteristics of their theory. Then we explain the notion of “audience” that is at the heart of the new rhetoric. After a treatment of the points of departure for argumentation, we turn to the central part of the theory by discussing Perelman and Olbrechts-Tyteca’s taxonomy of argument schemes. The chapter is completed with a discussion of the way in which insights from the new rhetoric have been adopted by other argumentation scholars as they applied them in their analyses of (specific types of) argumentative discourse or integrated them in their own approaches and by a discussion of criticisms that the new rhetoric has received.

In [Chap. 6, “Formal Dialectical Approaches”](#), the formal dialectical approaches to argumentation are at issue, starting with the logical *propaedeutic* of the Erlangen School. We then discuss some related contributions by Hintikka and by Nicholas Rescher and – more elaborately – Barth and Krabbe’s systems of formal dialectics. We briefly treat Hamblin’s formal dialectic, some of Jim Mackenzie’s dialectical procedures, Woods and Walton’s formal treatment of the fallacies, and Walton and Krabbe’s integration of different approaches into one system. At the end of this chapter, we briefly explain the semiformal method of profiles of dialogue.

In [Chap. 7, “Informal Logic”](#), our survey of the present state of affairs in argumentation theory starts with an exposition of the (re)emergence of informal logic. In discussing the main issues taken on by informal logicians, we focus on Blair and Johnson’s joint and individual contributions, Finocchiaro’s historical and empirical approach, Trudy Govier’s critical analysis of key concepts in informal logic, the epistemological approaches of Robert Pinto and others, Freeman’s Toulminian approach to argument(ation) structure and work on argument acceptability, and

Walton's views on argument(ation) schemes and dialogue types. In addition, we discuss some specific contributions to informal logic, namely, those of Hansen, David Hitchcock, and Tindale.

In Chap. 8, “Communication Studies and Rhetoric”, we focus on contemporary developments in argumentation theory that have taken place in the study of communication and rhetoric in the United States. We start our overview with a discussion of the role of argumentation in the debate tradition in which the study of argumentation in communication studies developed. Then we pay attention to the starting points for theorizing about argumentation which constitute answers to the questions of what argumentation is, in what ways it manifests itself, and how the study of argumentation relates to logic, dialectic, and rhetoric. Next we turn to two major research traditions: historical-political analysis of argumentative discourses known as “rhetorical criticism” and the study of characteristics of argumentation from the perspective of rhetorical theory. Starting from the Toulmin view of context-dependency, we concentrate next on two important notions: “argument fields” and “spheres of argumentation.” After this, “normative pragmatics” is discussed, in which the norms playing a part in actual argumentative discourse are studied with the help of Gricean and other pragmatic insights. The chapter is concluded by paying attention to argumentation in persuasion research and argumentation in interpersonal communication.

In Chap. 9, “Linguistic Approaches”, several language-oriented approaches to argumentation are discussed mainly stemming from argumentation theorists publishing not primarily in English, to begin with Grize's psychological and epistemological natural logic developed in Switzerland. Then the focus is on the French linguists Ducrot and Anscombre. Attention is paid to their radical *argumentativism* and to their ideas concerning polyphony. Next the contributions of the French argumentation theorists Plantin and Doury and the Israeli researcher Amossy relating to conversation analysis and discourse analysis are discussed. Finally we go into the primarily semantic-pragmatic approach to argumentation developed in the Italian-speaking part of Switzerland by Rigotti, Rocci, and Greco Morasso.

In Chap. 10, “The Pragma-Dialectical Theory of Argumentation”, we discuss the pragma-dialectical approach developed in the Netherlands by van Eemeren and Grootendorst. The model for critical discussion is introduced and the rules for critical discussion. The pragma-dialectical method for reconstructing argumentative discourse and the treatment of the fallacies are also discussed. Van Eemeren, Houtlosser, and Snoeck Henkemans's study of argumentative indicators and van Eemeren, Garssen, and Meuffels's experimental research concerning the conventional validity of the discussion rules are given their due, just as van Eemeren and Houtlosser's introduction of rhetorical insights into the theory with the help of the concept of strategic maneuvering. In discussing the contextualization of the analysis and evaluation of argumentative discourse by differentiating between various more or less institutionalized communicative activity types, attention is paid to the contributions to the study argumentation in the legal domain by Feteris and others and those of other pragma-dialecticians with regard to argumentation in the political, the medical, and the academic domain.

In Chap. 11, “Argumentation and Artificial Intelligence”, we concentrate on the implementation of insights from argumentation theory in the field of computer science and artificial intelligence, which has become a research interest in its own right. Among the topics we discuss are non-monotonic logic and defeasible reasoning but also case-based reasoning and reasoning with legal rules. Specific attention is paid to argument attack studied as an abstract formal relation, an approach that has become very influential. A notion from argumentation theory that is frequently used in a digital context is that of argument schemes. We therefore explain how it is interpreted and implemented. A central notion from the digital context itself that is exploited in putting insights from argumentation theory to good use is that of dialogue protocols. We explain what this notion involves and in what ways it can be instrumental in argumentation theory. The treatment of argument structure in artificial intelligence is discussed, also in connection with software that can support argumentation.

In Chap. 12, “Research in Related Disciplines and Non-Anglophone Areas”, we discuss developments which have taken place, more or less independently, outside the research traditions treated in the earlier chapters. First, attention is paid to research in some disciplines and research programs that connect with argumentation theory and may even have some overlap with it: *critical discourse analysis*, *historical controversy analysis*, *persuasion research* and related quantitative research projects, and studies stemming from relevance theory which promote an *argumentative turn in cognitive psychology*. Next, we concentrate on developments in argumentation research that have taken place in non-Anglophone parts of the world, in which research results are often published in other languages than English. Concentrating on contributions which have not yet been discussed in other chapters, we give an overview of argumentation research in the Nordic countries; in German-speaking, Dutch-speaking, French-speaking, and Italian-speaking areas; in Eastern Europe; in Russia and other parts of the former USSR; in Spanish-speaking and Portuguese-speaking areas; in Israel; in the Arab world; in Japan; and in China.

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2.1 Dialectic, Logic, and Rhetoric

A great many of the theoretical concepts as well as a large part of the terminology used in present-day approaches to argumentation are adopted from or inspired by the classical disciplines of dialectic, logic, and rhetoric. In this chapter, we shall discuss the origins as well as the further development of these disciplines in antiquity, i.e., in the period stretching from the fifth century BC up until the seventh century AD.

In [Sect. 2.2](#), we discuss the beginnings of dialectic, logic, and rhetoric in ancient Greece. As far as dialectic and logic are concerned, we shall concentrate on the contributions made by Zeno of Elea in his paradoxes and those made by Plato in his dialogues. Regarding the beginnings of rhetoric, we shall pay attention to the contributions of the sophists as well as the views manifest in the teachings of Isocrates of Athens and in the anonymous *Rhetoric to Alexander*.

The next three sections are devoted to classical dialectic. In [Sect. 2.3](#), we discuss Aristotle's conception of dialectic as put forward in his *Topics*. After a reconstruction of Aristotle's views on the structure and goals of dialectical debates, we shall turn to the central notion of a *topos* and discuss some of Aristotle's instructions on the proper conduct of a debate. Our discussion of Aristotle's dialectic continues in [Sect. 2.4](#) with a description of his list of fallacies as put forward in the *Sophistical Refutations*. In [Sect. 2.5](#), the last section on classical dialectic, we present a reconstruction of the contributions of Cicero and Boethius to the theory of topics.

In the two subsequent sections, we shall elaborate on the ancient roots of two important logical theories of argumentation. In [Sect. 2.6](#), we expound Aristotle's highly influential theory of the syllogism, a forerunner of predicate logic. In [Sect. 2.7](#), we call attention to the relatively unfamiliar but intriguing notions developed in Stoic logic, a forerunner of propositional logic.

The next two sections will be devoted to classical rhetoric. Since Aristotle is the first to systematically reflect on the phenomenon of persuasion, we shall first give an exposition of his contributions to the art of rhetoric. This is done in [Sect. 2.8](#). After Aristotle, rhetoric slowly developed into a teachable system of instructions

for the production of a persuasive speech. Various classical authors have contributed to the system, but instead of discussing their contributions one by one, we demonstrate in [Sect. 2.9](#) the subordinate doctrines developed within the discipline by using as our organizational principle the so-called canons or tasks of the speaker, i.e., the consecutive tasks a speaker will have to accomplish in preparing the actual performance of a speech. In dealing with the various tasks and doctrines, we shall mention the most important classical authors involved in their development.

Finally, in [Sect. 2.10](#), we briefly sketch the further development of the disciplines in the Middle Ages and the Renaissance and conclude the chapter with a brief survey of the relationships between the ancient disciplines of logic, dialectic, and rhetoric and present-day argumentation theory as discussed in this handbook. As an aid to the reader, a chronological table of ancient authors and works has been attached to the last section.

2.2 Beginnings of Dialectic, Logic, and Rhetoric

The ancient Greeks often accounted for the existence of the various arts employed by mankind by attributing the invention of such an art to a god, a hero, or a person that had lived in the past. As far as dialectic and rhetoric are concerned, Diogenes Laertius (third century AD) in *Lives of eminent philosophers*¹ – one of the most important sources for the history of Greek philosophy – has Aristotle mention Zeno of Elea as the inventor of dialectic and Empedocles of Agrigentum as the inventor of rhetoric. Diogenes Laertius does not provide any information on who invented logic, probably because logic at the time was not considered a discipline of its own separate from dialectic; with the Stoics and in the later ancient tradition, the term *dialektikê* includes logic.

Taking other sources into account, it appears that attributions of this kind are not always in agreement with one another. As far as dialectic is concerned, Aristotle mentions Zeno, Socrates, and Plato as inventors of this art and also claims that he himself is the first to give a theoretical account of it. As far as rhetoric is concerned, there is the story, also adhered to by Aristotle, that two lawyers from Sicily, Corax and Tisias, invented it.

The attributions being as discrepant as they are, one important difference between the beginnings of dialectic and that of rhetoric stands out: dialectic developed within contexts of private gatherings where philosophers discussed the nature of reality and mankind, while rhetoric developed within contexts of the

¹ See Diogenes Laertius (1925). The work was written in Greek and has several titles in Greek and in Latin, for instance, in Greek, *Bioi kai gnômai tôn en philosophiai eudokimêsantôn* (*Lives and opinions of the eminent philosophers*), or simply *Bioi philosophôn* (*Lives of philosophers*), and in Latin, *Vitae philosophorum* (*Lives of philosophers*). In references we shall use the abbreviation “LP.”

public life where citizens delivered speeches regarding judicial and political issues in front of a judging audience.

In this section, we first provide an overview of the beginnings of dialectic and logic as they are manifest in the paradoxes of Zeno and the dialogues of Plato. Reflecting the fact that, at the time of their early development, no clear distinction was drawn between dialectic and logic, in the present description of their beginnings, we treat these disciplines as one. Next, we provide an overview of the beginnings of rhetoric as they are manifest in the teachings of the sophists, Isocrates of Athens, and the anonymous *Rhetoric to Alexander*.²

2.2.1 The Beginnings of Dialectic and Logic

Zeno of Elea (probably about 490–430 BC) is famous for having left us a number of paradoxes. These have not come down to us directly but via the work of others who have reported on them. From what can be reconstructed from these reports, it appears that Zeno in some of these paradoxes employs a method of refutation that consists in deriving from a standpoint to be refuted two consequences that contradict one another. In later writings on dialectic and logic, this method is described as the argumentative technique of *reductio ad absurdum* or *reductio ad impossibile*.

An example of such a report can be found in Plato's dialogue *Parmenides*. In one of the passages of this dialogue, Socrates and Zeno discuss the latter's attempt to defend the monistic ontology that "being is one," put forward by Zeno's teacher, Parmenides of Elea (*floruit* about 500 BC), against attacks by other philosophers who propagated the pluralistic ontology that "being is many":

[Socrates:] "Zeno, what do you mean by this: if things are many, they must then be both like and unlike, but that is impossible, because unlike things can't be like or like things unlike? That's what you say, isn't it?"

"It is," said Zeno.

"If it's impossible for unlike things to be like and like things unlike, isn't it then also impossible for them to be many? Because, if they were many, they would have incompatible properties. Is this the point of your arguments – simply to maintain, in opposition to everything that is commonly said, that things are not many? And do you suppose that each of your arguments is proof for this position, so that you think you give as many proofs that things are not many as your book has arguments? Is that what you're saying – or do I misunderstand?" (Plato 1997, *Parmenides* 127e–128a)

Following on Zeno's affirmative response to this question, Socrates accuses him of having presented his view on the nature of reality as an original one, whereas in fact it is the same one as his teacher Parmenides held. According to Socrates, to show that reality does not consist of many things is the same as to show that reality

² The subsection on the beginnings of dialectic and logic draws on Kneale and Kneale (1962) and Wagemans (2009). The subsection on the beginnings of rhetoric draws on Kennedy (2001) and Pernot (2005).

consists of only one thing. Zeno then denies the accusation and explains the aim of his philosophical work in more detail:

[Zeno:] “The truth is that the book comes to the defense of Parmenides’ argument against those who try to make fun of it by claiming that, if it is one, many absurdities and self-contradictions result from that argument. Accordingly, my book speaks against those who assert the many and pays them back in kind with something for good measure, since it aims to make clear that their hypothesis, if it is many, would, if someone examined the matter thoroughly, suffer consequences even more absurd than those suffered by the hypothesis of its being one.” (Plato 1997, *Parmenides* 128c–d)

Whereas Socrates suggests that Zeno is aiming at proving the standpoint that reality is one (*demonstratio per impossibile*), Zeno himself explains that he is only aiming at showing that the standpoint that reality is many leads to absurdity (*reductio ad absurdum*) and impossibility (*reductio ad impossibile*).

This and other reports of Zeno’s paradoxes indicate that he was famous for employing the argumentative technique of *reductio* in order to refute a standpoint. From later developments in dialectic – especially from Plato’s specimens, in his early dialogues, of debates featuring “Socratic refutation” or “elenchus” (Greek: *elegchos*) and from the dialectical procedure that underlies Aristotle’s *Topics* and *Sophistical refutations* – it becomes clear that this way of refuting a standpoint is central to the discipline. It may therefore be assumed that it is for Zeno’s excellence in using the argumentative technique of the *reductio* that later authors endowed him with the status of being the “inventor” of dialectic.³

Whereas Zeno employed an argumentative technique that can only retrospectively be labeled as “dialectical,” Plato was the first one to explicitly use the term *dialectic* as a technical term. In general, throughout his dialogues, he presents dialectic as the outstanding “method” of philosophizing, i.e., as a way of finding and expounding philosophical truths by means of conducting discussions. Most scholars agree that Plato gives three different accounts of what this method entails. In some of the dialogues generally labeled as the “early” dialogues – esp. in the *Apology*, *Lesser Hippias*, *Euthyphro*, *Laches*, *Lysis*, *Charmides*, *Protagoras*, and *Gorgias* – dialectic takes the form of the “Socratic refutation debate.” In some of the “middle” dialogues – esp. in the *Meno*, *Phaedo*, *Republic*, and *Parmenides* – dialectic takes the form of the “method of hypothesizing.” And finally, in some of the “late” dialogues – esp. in the *Phaedrus*, *Sophist*, *Statesman*, and *Philebus* – dialectic takes the form of the “method of collection and division.”⁴ Below, we shall briefly describe these three different forms of dialectic as they manifest themselves in the dialogues just mentioned.

The *Socratic refutation debate* is a type of debate prominent in Plato’s early dialogues in which Socrates (as the Questioner) aims to refute the standpoint of his

³ See Diogenes Laertius, *Lives of eminent philosophers* VIII, 57; IX, 25, and Sextus Empiricus, *Against the logicians* I (= *Adversus mathematicos* VII), 6–8.

⁴ For a critical account of the chronological grouping of Plato’s dialogues see Plato (1997, pp. xii–xviii) and Kraut (1992).

interlocutor (the Answerer). Prototypically, Socrates introduces the subject of the debate by asking an opening question. By responding to the question, the interlocutor takes up a standpoint with regard to the subject at issue. Socrates then asks a number of follow-up questions. By responding to these questions with “Yes” or “No,” the interlocutor commits himself to a number of concessions. At the end of the debate, Socrates then tries to refute the standpoint of the interlocutor on the basis of the concessions that are made. The refutation can be direct, in which case Socrates derives from the concessions a standpoint that is the opposite of the interlocutor’s answer to the opening question, or indirect, in which case he shows that the interlocutor’s set of opinions, consisting of the standpoint and the concessions, is internally inconsistent.

The Socratic refutation debate has a striking resemblance with another type of debate occurring in Plato’s early dialogues, the so-called *eristic debate* as the sophists practiced it. As in the Socratic refutation debate, the aim of the Questioner in an eristic debate is to refute the standpoint of the Answerer on the basis of the concessions made. In the examples Plato provides of this type of debate, the Questioner realizes his aim by making use of ambiguous terms. Having elicited a concession in which a certain term has a specific meaning, the Questioner at the end of the debate derives a conclusion in which the term has a different meaning.

A passage in the *Euthydemus*, in which Plato describes Socrates’ response to a question containing such an ambiguous term, makes it clear that the procedural problem that impedes the Answerer to properly defend his thesis in an eristic debate is that he is only allowed to say “Yes” or “No” and does not have the right to ask for a clarification of the terms used by the Questioner:

[Euthydemus:] And do you know by means of that by which you have knowledge, or by means of something else?

[Socrates:] By means of that by which you have knowledge. I suppose you mean the soul, or isn’t this what you have in mind?

Aren’t you ashamed, Socrates, he said, to be asking a question of your own when you ought to be answering?

Very well, said I, but how am I to act? I will do just what you tell me. Now whenever I don’t understand your question, do you want me to answer just the same, without inquiring further about it?

You surely grasp something of what I say, don’t you? he said.

Yes, I do, said I.

Then answer in terms of what you understand.

Well then, I said, if you ask a question with one thing in mind and I understand it with another and then answer in terms of the latter, will you be satisfied if I answer nothing to the purpose?

I shall be satisfied, he said, although I don’t suppose *you* will.

Then I’m certainly not going to answer, said I, until I understand the question.

You are evading a question you understand all along, he said, because you keep talking nonsense and are practically senile.

I realized he was angry with me for making distinctions in his phrases, because he wanted to surround me with words and so hunt me down. (Plato 1997, *Euthydemus* 295b–d)

If the Answerer had been allowed to ask for clarification of the meaning of terms used in the question at issue, he would have been able to avoid being refuted in an

unreasonable manner. By revealing an underlying mechanism of the eristic debate, Plato criticizes the sophists for exploiting the rules of the game of the elenchus in order to win the debate at the cost of philosophical reasonableness.

In his middle dialogues, Plato describes a second form of dialectic, the so-called *method of hypothesizing*. While the aim of the Socratic refutation debate is to find out whether a standpoint is tenable in the light of certain concessions made, the aim of the method of hypothesizing is to actually show that a standpoint is tenable. The method is derived from mathematical practice. First, the discussants derive from the standpoint – the “hypothesis” – certain other points of view that follow from it, the “consequences.” Then, in case the set of consequences is internally consistent, the hypothesis is accepted, and in case the set of consequences is internally inconsistent, the hypothesis is abandoned. In the latter case, the discussants may finally arrive at an acceptable standpoint by modifying the initial hypothesis in such a way that the set of consequences derived from the adapted hypothesis does comply with the condition of being internally consistent.

In search of a method that arrives at the ultimate philosophical truth, Plato in the *Republic* defines dialectic as a method that leads the discussants to an understanding of an “unhypothesized” first principle called “the idea of the Good”:

[...] whenever someone tries through argument and apart from all sense perceptions to find the being itself of each thing and doesn't give up until he grasps the good itself with understanding itself, he reaches the end of the intelligible, just as the other reached the end of the visible.

Absolutely.

And what about this journey? Don't you call it dialectic?

I do. (Plato 1997, *Republic* 532a–b)

Because this form of dialectic, according to Plato, enables the discussants to reach the highest possible philosophical knowledge, in his educational program for the future ruler of the state, he places dialectic “at the top of the other subjects like a coping stone” (Plato 1997, *Republic* 534e).

In his late dialogues, Plato describes a form of dialectic that is rather different from the Socratic refutation debate as well as from the method of hypothesizing. This form of dialectic is called the *method of collection and division*, and it is aimed at arriving at a philosophically adequate definition of a certain term. Although nowhere in the dialogues Plato gives a clear description of the method of collection and division, the method can be reconstructed as consisting of two parts. In the first part – the *collection* – the term that is to be defined is brought together with related terms in order to decide which of the collected terms is the most comprehensive. In the second part of the method – the *division* – the most comprehensive term is divided into species and subspecies until the discussants have arrived at the term that is to be defined. In the *Sophist* Plato gives an example of such a division. Starting from the comprehensive term *expertise*, the subsequent divisions of the term are aimed at finding a definition of the term *angling*.⁵ The debate resembles

⁵ Gill (2012, Chaps. 5–6) provides an elaborate account of this and many other divisions in Plato's *Sophist* and *Statesman*.

other forms of dialectic in that there is a Questioner and an Answerer, but in this case the Questioner does not aim at refuting the standpoint of the Answerer but expounds his own views on the matter in a didactical way:

VISITOR: If every expertise falls under acquisition or production, Theaetetus, which one shall we put angling in?

THEAETETUS: Acquisition, obviously.

VISITOR: Aren't there two types of expertise in acquisition? Is one type mutually willing exchange, through gifts and wages and purchase? And would the other type, which brings things into one's possession by actions or words, be expertise in taking possession?

THEAETETUS: It seems so, anyway, given what we've said.

VISITOR: Well then, shouldn't we cut possession-taking in two?

THEAETETUS: How?

VISITOR: The part that's done openly we label combat, and the part that's secret we call hunting.

THEAETETUS: Yes.

(Plato 1997, *Sophist* 219d–e)

At the end of the discussion, the definition is given by summing up in the right order all the species and subspecies that link the term to be defined with the most comprehensive term.

Enabling the discussants to find definitions of things in terms of genus-species relationships, the method of collection and division can be characterized as a method that is aimed at gaining philosophical knowledge about the interrelations of the “ideas” or “forms.” Since the quality of the knowledge thus arrived at strongly depends on the skills of the interlocutors in dividing the terms in the correct manner, Aristotle criticized the method for not being deductive in the strict sense (*Prior Analytics* 46a31–37 and *Posterior analytics* 91b12–27). Following up on this criticism, Aristotle in his own writings uses the term *dialectic* to designate the art of debate rather than the ultimate method for reaching philosophical or scientific truth.

Of the three different forms of dialectical discussions described in Plato's dialogues, the Socratic refutation debate probably reflects the philosophical debates as they were conducted in Plato's school – the Academy. Aristotle, who studied and taught in the Academy for a period of 20 years, claims to be the first to provide a theoretical account of this type of dialectical discussions, which we will discuss in [Sects. 2.3](#) and [2.4](#). Later, Cicero and Boethius elaborate on an important part of Aristotle's account, the doctrine of the “topics.” We will discuss these later developments in [Sect. 2.5](#).

2.2.2 The Beginnings of Rhetoric

Like the beginnings of dialectic and logic, those of rhetoric are not clearly marked. Ancient sources attribute the “invention” of rhetoric to figures as different as the Sicilian lawyers Corax and Tisias and the philosopher Empedocles.⁶ There is some

⁶See Cicero, *Brutus* 46–48, and Diogenes Laertius, *Lives of eminent philosophers* VIII, 57, respectively.

evidence that already in the fifth century certain handbooks on the composition and the presentation of an effective speech (*technai logôn*) were in circulation. Both Plato (*Phaedrus*, 266d–267d) and Aristotle (*Rhetoric* I.1, 1354a11–1355a20, and III.13, 1414a37–b7) give a critical account of these handbooks, from which it can be learned that they may have contained examples and/or instructions regarding the parts of a speech, the use of stylistic devices, and the use of emotion as a means of persuasion. Other citations by Plato (*Phaedrus*, 273a–b) and Aristotle (*Rhetoric* II.24, 1402a17–20) indicate that the handbooks may also have contained illustrations of logical means of persuasion, in particular of the argument from probability (*eikos*).

Around the same time, a number of thinkers, generally referred to as the *sophists*, started to manifest themselves as teachers of rhetoric.⁷ Among the most famous of them are Protagoras of Abdera, Gorgias of Leontini, Prodicus of Ceos, and Hippias of Elis. Although the sophists are referred to as a group, they operated individually. Travelling from city to city, they presented an educational program intended to prepare young people for a future role in public life. Their teaching concentrated on skills regarding the composition and presentation of an effective speech. It did not take place by means of presenting the rules of the art but rather by means of providing the students with model speeches (*epideixeis*, singular: *epideixis*) for them to imitate. Among the surviving model speeches are *The encomium of Helen* and *The defence of Palamedes*, both written by Gorgias, and the *Tetralogies*, attributed to Antiphon of Rhamnus (ca. 480–411 BC).⁸

One of the underlying assumptions of the teaching of the sophists is the relativistic idea that there are always two sides to every issue and that ultimate truth is not to be found.⁹ Another important assumption is the idea that in order to persuade, the speaker does not necessarily have to be an expert on the subject. Plato criticizes this idea in his *Gorgias*, in a passage where Socrates denies the rhetoric of the sophist Gorgias the status of a true art and describes it as a form of “flattery” that is comparable to “pastry baking”:

Pastry baking has put on the mask of medicine, and pretends to know the foods that are best for the body, so that if a pastry baker and a doctor had to compete in front of children, or in front of men just as foolish as children, to determine which of the two, the doctor or the pastry baker, had expert knowledge of good food and bad, the doctor would die of starvation. [...] So pastry baking, as I say, is the flattery that wears the mask of medicine [...] what pastry baking is to medicine, oratory is to justice [...] You’ve now heard what I say oratory is. It’s the counterpart in the soul to pastry baking, its counterpart in the body. (Plato 1997, *Gorgias* 464d–465d)

⁷ According to Schiappa (1990), there is no such thing as the *rhetoric* of the sophists, since the term is not attested in any texts prior to Plato (e.g., *Gorgias* 449c), who may have first coined the term in a polemic sense.

⁸ Antiphon of Rhamnus (in Attica), also known as Antiphon the Orator, may or may not have been the same person as the one known as Antiphon the Sophist.

⁹ On the sophistic idea of arguing on both sides of the issue, see, for instance, Mendelson (2002) and Tindale (2010).

The upshot of Plato's critique of the rhetoric of the sophists is that it teaches speakers to persuade by telling the audience what is pleasant rather than what is the best thing to do. Within the context of political or deliberative debates, this may lead to making wrong decisions. In Plato's view, a speaker should not try to gain or maintain political power by deceiving the audience in this way but should promote the general interest by sincerely trying to convince the audience of the best decision to take. Rather than acting like a cook who presents his audience with tasty but unhealthy dishes, the speaker should act like a physician, providing his audience with a bitter but healthy medicine.

Plato at the end of the *Gorgias* (503a–b) preludes on the development of a type of rhetoric that avoids the pitfalls of sophistic rhetoric. In the *Phaedrus*, he expounds the conditions for such a philosophically legitimate type of rhetoric.¹⁰ As the following passage shows, this type of rhetoric presupposes the type of dialectic called the method of collection and division as a method for teaching or persuading one's audience of the truth in an effective way:

First, you must know the truth concerning everything you are speaking or writing about; you must learn how to define each thing in itself; and, having defined it, you must know how to divide it into kinds until you reach something indivisible. Second, you must understand the nature of the soul, along the same lines; you must determine which kind of speech is appropriate to each kind of soul, prepare and arrange your speech accordingly, and offer a complex and elaborate speech to a complex soul and a simple speech to a simple one. Then and only then, will you be able to use speech artfully, to the extent that its nature allows it to be used that way, either in order to teach or in order to persuade. This is the whole point of the argument we have been making. (Plato 1997, *Phaedrus* 277b–c)

Distinct from this philosophically legitimate type of rhetoric, Isocrates of Athens (436–338 BC) developed an educational program that resembled that of the sophists in being intended to teach students how to successfully operate in public life. However, for several reasons, Isocrates is not considered a sophist. First of all, unlike most sophists, he did not travel around but taught in a school he had opened in Athens. Second, Isocrates supposedly never delivered a speech himself, since he was better as a writer of speeches than as a presenter of them. Twenty-one of these written model speeches have survived. Third, his teaching of rhetorical skills was embedded in a larger educational program that also consisted of ethics and political philosophy. And fourth, most importantly, he taught his students rhetoric not only by providing model speeches for them to imitate but also by explaining to them the principles of the art. An example of the latter can be found in a passage in which Isocrates, for the first time in the history of rhetoric, mentions invention, arrangement, and style, which were later incorporated into rhetorical teaching as the three most important of the five “tasks of the speaker” (*officia oratoris*) or “canons of rhetoric”:

But to choose from these elements [out of which we make and compose all discourses] those which should be employed for each subject, to join them together, to arrange them

¹⁰ For a commentary on the *Phaedrus* that has a strong emphasis on the rhetorical contents of the dialogue, see Yunis (Ed., 2011).

properly, and also, not to miss what the occasion demands but appropriately to adorn the whole speech with striking thoughts and cloth it in flowing and melodious phrase – these things, I hold, require much study and are the task of a vigorous and imaginative mind. (Isocrates 1929, *Against the sophists* 13, 16–17)

A final important contribution to the early development of rhetoric is a handbook that came down to us as the *Rhetoric to Alexander*, written somewhere around 34 BC. Since it starts with a letter in which Aristotle dedicates the work to Alexander the Great, some have assumed that Aristotle wrote it. However, Quintilian (*Oratorical education* III.4.9) seems to identify Anaximenes of Lampsacus (ca. 380–320 BC) as the writer of the treatise.

Unlike other handbooks, the *Rhetoric to Alexander* does not only contain models or examples for imitation but also more or less systematically organized collections of rules (or instructions) pertaining to different types of speech. Starting from the distinction between deliberative, epideictic, and juridical speeches (the three basic genres), the author distinguishes seven types of speech: exhortation, dissuasion, praise, blame, accusation, defense, and investigation.¹¹ Having presented the subject matters specific to each of these types (1–6), the author gives a general analysis of arguments (7–17), strategic maneuvers (18–20), and style (21–28). The work is concluded with an overview of the structures specific to each of the seven types of speech (29–37).

As we have explained, the contributions of the sophists, Plato, Isocrates, and those in the *Rhetoric to Alexander* are to be seen as the start of the development of rhetoric as a coherent and didactically effective set of instructions for the production and delivery of a persuasive speech. The first author to systematically reflect on these instructions was Aristotle, whose *Rhetoric* we shall discuss in Sect. 2.8. In the centuries after the fourth century BC, Greek and Roman writers modified and extended the rhetorical instructions, resulting into what is now commonly referred to as the *system of classical rhetoric*, which we shall discuss in Sect. 2.9.

2.3 Aristotle's Theory of Dialectic

As we already mentioned, students and teachers in Plato's Academy took part in philosophical debates that were closely related to Socratic refutation debates. Aristotle (384–322 BC), who studied and taught in the Academy for a period of 20 years, was the first to write extensively on the aims, structure, rules, and strategies of such debates. His handbook of philosophical debates, known as the *Topics* (*Topica*),¹² consists of eight books. The *Topics* together with the single book

¹¹ The distinction between the three basic genres is often thought to be a later intrusion devised in order to assimilate the work to Aristotelian standard theory. Quintilian (*Oratorical education* III.4.9) seems to attribute to the author only two basic genres: juridical (*iudiciale*) and deliberative (*contionale*).

¹² An English translation can be found in Aristotle (1984, Vol. 1).

Sophistical refutations (*Sophistici elenchi*)¹³ – a supplementary volume that is sometimes catalogued as its ninth book – can be regarded as the first extensive work on dialectic (including logic). The work was obviously inspired by Plato's rendering of the Socratic refutation debates in his early dialogues, but these dialogues do not yet constitute a treatise about dialectic. Aristotle himself claimed, at the end of *Sophistical refutations* (in a passage that also refers to the *Topics*), that, in contrast to the situation in rhetoric, his dialectical investigations had to start from scratch:

[...] as far as our inquiry is concerned, it is not the case that some work had been done before, while some had not; rather, there was nothing at all. (Aristotle 2012, *Soph. ref.* 34, 183b34–36)

In one sense of the word *dialectical*, all debates, being conversations, are dialectical. However, Aristotle's inquiries pertain to a specific type of debate, between a Questioner and an Answerer, whom the Questioner tries to refute. Unfortunately, no learner's guide to these debates has been left to us. Aristotle just assumes that his audience or readership is familiar with the basics. We shall therefore first give a reconstruction of the way in which such debates may be supposed to have proceeded.¹⁴

2.3.1 The Dialectical Procedure

Basically the Athenian philosophical debate (henceforth, dialectical debate) is a regimented version of the Socratic refutation debate we discussed in the preceding section. There are two participants, each of whom has a different role to play: the Questioner (*erôtôn*, *punthanomenos*) and the Answerer (*apokrinomenos*, *erôtômenos*, *erôtêmenos*). Generally, the debate takes place in front of an audience. In what, in a pragma-dialectical vein, may be called the *opening stage* of the debate, it is first determined which participant will play which role. The Questioner then proposes an issue (*problêma*) for debate by putting forward a propositional question: a question which offers a choice between two contradictory propositions, such as “Is the universe infinite or not?” or “Is virtue teachable or not?” The Answerer selects either the positive or the negative answer as his thesis. The contradictory of the Answerer's thesis counts as the thesis of the Questioner. This concludes the opening stage.

The primary aim of the Questioner is to construct a refutation (*elegchos*) of the Answerer, i.e., a deductive argument or deduction (*sullogismos*) consisting of (at least two) premises and a conclusion that is to contradict the thesis of the

¹³ An English translation can be found in Aristotle (1984, Vol. 1) and in Aristotle (2012).

¹⁴ Our reconstruction of the academic dialectical discussion (or debate) is based on Moraux (1968), Slomkowski (1997), and the summaries in Krabbe (2012a) and in Hasper and Krabbe's introduction to the Dutch translation of *Sophistical Refutations* (Aristoteles 2014).

Answerer, and therefore to be identical to the Questioner's own thesis. The notion of a *deduction* is defined as follows:

Now a deduction is an argument in which, certain things being laid down, something other than these necessarily comes about through them (Aristotle 1984, Vol. 1, *Topics* I.1, 100a25–27)

With respect to its linguistic structures, this notion of deduction is clearly not limited to what we would now call “syllogisms.” But, in other respects, Aristotle's notion of a deductive argument is more restricted than contemporary notions of deduction. For one thing, according to the Aristotelian view, there is no such thing as an *invalid* deduction. What we would be inclined to call by that name would simply be no deduction at all (though it could still be an argument (*logos*)). Further, the Aristotelian notion does not admit deductive arguments in which there are not at least two premises, or in which the conclusion is equal to one of the premises or in which one of the premises is not needed to obtain the conclusion.

Notice that it is not upon the Answerer to construct a refutation of the Questioner or, what comes to the same, to defend his thesis by argument: only the Questioner is to argue. The primary aim of the Answerer is to uphold his thesis, i.e., to avoid being refuted.

In order to construct a refutation, the Questioner is to obtain premises/propositions (*protaseis*, singular: *protasis*) that allow him to deduce his thesis. It is not upon the Questioner to decide which premises he may use, because the Answerer first needs to agree with any premise the Questioner proposes. To obtain such an agreement from the Answerer, the Questioner uses again propositional questions (called *protaseis* as well), which are however formulated in a way slightly different than that used for introducing the issue for debate, for instance: “Has the universe come to be?” or “Is virtue knowledge?” If the Answerer answers such a question either affirmatively or negatively, he has granted a premise.¹⁵ But the Answerer is not in all circumstances obliged to give immediately either a positive or a negative answer: he is allowed to first ask for clarification of the question, or he may object to it, for instance, because the question contains an ambiguity that must first be resolved.

Now it may seem that the Answerer could always win the debate by simply objecting to any premise the Questioner might ask for. But this he cannot do, since in dialectical debates, unless they are degenerated into eristic debates, the audience expects the discussants to display reasonable behavior and to cooperate to some extent in their common enterprise (*koinon ergon*) of producing good arguments. Therefore, an Answerer refusing to concede acceptable (plausible, reputable) premises (*endoxa*, singular: *endoxon*) would be frowned upon by the audience

¹⁵ The two distinct functions of questions that introduce an issue (*problēmata*) and questions that ask to concede a premise (*protaseis*) were curiously interchanged by Kneale and Kneale (1962, pp. 34–35) and also by van Eemeren et al. (1996, p. 38), but this was corrected in the Dutch translation. See Slomkowski (1997, p. 21, Note 60).

and might even make a fool of himself.¹⁶ An Answerer who persistently uses such tactics would be showing himself ill-tempered (*duskolos*), which is certainly no compliment. Answering by conceding the opposite of what the Questioner wants him to concede would make matters even worse because if the premise asked for is true, the opposite must be false and if this premise is acceptable, the opposite must be unacceptable. Thus, the ill-tempered Answerer would weaken his position by getting entangled in falsehoods and implausibilities. All the same, it is not easy for the Questioner to find acceptable premises to support his own thesis. Facilitating this task was precisely one of Aristotle's main purposes when he wrote the *Topics*. A large part of the *Topics* is devoted to the description of about 300 *topoi* (Rubinelli 2009, p. 29), which may, according to some scholars, be compared to what nowadays are known as argument (or argumentation) schemes.

In some cases, considerations of acceptability and pressure from the audience will be enough to make the Answerer willing to concede a certain premise (suggested by a *topos*), but often it is necessary to argue for the premise. Since the argument for the premise may be again deductive, it may be necessary to argue in a sub-deduction for a premise needed for the ultimate deduction of the Questioner's thesis and again to argue for premises of these sub-deductions, and so on. This makes the dialectical procedure of debate a recursive one. But, though the ultimate argument for the Questioner's thesis is supposedly required to be deductive, not all arguments of which the Questioner may avail himself to obtain premises need to be so. It is also permitted to argue for premises in a non-deductive way: induction (*epagôge*) can be used to get a universal premise admitted and arguments from likeness (*homoiotês*) to go directly from case to case, skipping the establishment of a universal.

The first of these non-deductive ways of arguing for premises, *induction*, is defined as follows:

[...] induction is a passage from particulars to universals, e.g. the argument that supposing the skilled pilot is the most effective, and likewise the skilled charioteer, then in general the skilled man is the best at his particular task. (Aristotle 1984, Vol. 1, *Topics* I.12, 105a13–16)

When the particular cases that function as the premises of the induction have been admitted, the Answerer is expected to also admit the universal conclusion – in the example above: “For each task a man skilled in that task is best at that task.” The only escape would be to object not to a premise but to the induction itself by presenting a counterexample – in the example above, a particular task such that

¹⁶ Propositions are acceptable (*endoxos*) if they are “accepted by everyone or by the majority or by the wise – i.e., by all, or by the majority, or by the most notable and reputable (*endoxois*) of them” (Aristotle 1984, Vol. 1, *Topics* I.1, 100b21–23). As the quote shows, this word applies not only to propositions but also to people. In *Topics* VIII.5 and VIII.6, Aristotle proposes, for the Answerer, some refined rules with respect to the acceptability of premises, which take into account that premises must be more plausible than the conclusion that is drawn from them. See Włodarczyk (2000).

people skilled in that task are not the best in it. If the Answerer admits the particular cases and fails to present a counterexample, but still refuses to admit the universal conclusion, he would appear to be “ill-tempered.”¹⁷

About the second non-deductive way of arguing for premises, making use of *arguments from likeness*, Aristotle says:

Moreover, try to secure admissions by means of likeness; for such admissions are plausible, and the universal involved is less patent; e.g. that as knowledge and ignorance of contraries is the same, so too perception of contraries is the same; or vice versa, that since the perception is the same, so is the knowledge also. This argument resembles induction, but is not the same thing; for in induction it is the universal whose admission is secured from the particulars, whereas in arguments from likeness, what is secured is not the universal under which all the like cases fall. (Aristotle 1984, Vol. 1, *Topics* VIII.1, 156b10–17)

After having obtained the premises of his ultimate deduction (the final step in his refutatory argument), the Questioner proceeds to deduce his conclusion. He then claims to have refuted the thesis of the Answerer by having deduced its contradictory. To this the Answerer may still object by trying to show that the alleged refutation is fallacious on some account (see the discussion of Aristotle's theory of fallacies in the next section).

How does a dialectical debate end? If the Questioner has succeeded in constructing an unobjectionable refutation, we may say that the Questioner has won and the Answerer has lost. If the debate ends for some reason or other before the Questioner has succeeded, the Answerer has won and the Questioner has lost. There are some indications that these debates had a fixed time limit.¹⁸ However, winning or losing in this way does not give the whole picture: it is also important *how* one has won or lost. And this depends on the quality of one's contribution to the debate relative to the difficulty of one's task (Moraux 1968, pp. 285–286).

2.3.2 Goals of Dialectical Debates and of Other Types of Dialogue: Their Argumentative Character

Aristotle is not very explicit about the goals served by dialectical debates. The goal of a kind of activity should not be confused with the aims of the participants as they pursue the activity. In dialectical debates, the aim of either party is to win the debate and to do so in an impeccable way. But by this observation, the question why people would enter into such altercations at all is not answered.

At the start of *Topics* VIII.5, Aristotle distinguishes three types of dialogue by their different goals: (1) the truly dialectical debate, which is concerned with training (*gymnasia*), with critical examination (*peira*), or with inquiry (*skepsis*); (2) the didactic discussion, concerned with teaching; and (3) the competitive

¹⁷ See *Topics* VIII.8.

¹⁸ *Topics* VIII.10, 161a9–12 and *Soph. ref.* 33, 183a21–26, and also *Topics* VIII.2, 158a25–26. See also Moraux (1968, p. 285).

(eristic, contentious) type of debate in which winning is the only concern. Elsewhere, Aristotle distinguishes four domains of argument that are characteristic of these types of dialogue (though the connection need not be exclusive)¹⁹:

In discussions there are four domains of argument: didactic, dialectical, critical and eristic. Those arguments are didactic that deduce on the basis of the principles appropriate to the discipline in question and not on the basis of the views of the answerer (for the student should rely on them). Those arguments are dialectical that, on the basis of acceptable views, constitute a deduction of a contradictory. Those arguments are critically examining that are based on views of the answerer or on things that must be known by anyone who purports to have scientific knowledge [...]. And those arguments are eristic that, based on points that appear acceptable without being so, constitute a deduction or appear to constitute a deduction.²⁰ (Aristotle 2012, *Soph. ref.* 2, 165a38–b8)

The (critical) examination dialogue (peirastic) is concerned with the critical examination (*peiras*), by the Questioner, of a (would-be) expert (the Answerer). Is the expert really knowledgeable about the things he claims to know? Aristotle sometimes speaks about the examination dialogue as a separate type of dialogue but mostly subsumes it under dialectical debate. The examination dialogue starts from a difference of opinion about the question whether the Answerer is knowledgeable in a certain field and uses arguments to resolve the difference and therefore constitutes a kind of argumentative discussion.²¹ Also, the eristic debate, though it is focused on letting people wrangle rather than on obtaining a resolution, is an argumentative activity in as far as it starts from a difference of opinion and uses arguments. It is a type of debate that is dangerously close to the dialectical debate, since in a dialectical debate eristic moves always threaten to slip in. On the other hand, didactic discussion, which is concerned with the presentation of demonstrations (proofs) by a teacher to his students, constitutes a primarily informative kind of discussion.

In *Topics* I.2, Aristotle briefly discusses the ways his treatise can be of use; doing so he also throws light on the goals of dialectical debates:

Next in order after the foregoing, we must say for how many and for what purposes the treatise is useful. They are three – intellectual training, casual encounters, and the philosophical sciences. That it is useful as a training is obvious on the face of it. The possession of a plan of inquiry will enable us more easily to argue about the subject proposed. For purposes of casual encounters, it is useful because when we have counted up the opinions

¹⁹ In the passage here cited, we interpret *didactic arguments* as arguments characteristic of didactic discussions. Similarly, we interpret *dialectical arguments* as arguments characteristic of truly dialectical debate; *critically examining arguments* as arguments characteristic of critical examination dialogues (peirastic), a subtype of dialectical debate; and *eristic arguments* as arguments characteristic of eristic debate. Wolf (2010) provides an analysis of Aristotelian “argumentation forms” based on three criteria and yielding seven different forms.

²⁰ Here one may add: “or merely appear to deduce a conclusion from acceptable premises.” See *Topics* I.1, 100b23–25.

²¹ In the rare case that neither the Questioner nor the Answerer holds that the Answerer is or is not knowledgeable in the field, but both try to find out what is the case, there is no difference of opinion. Consequently, the critical examination would not be argumentative, but still a kind of test.

held by most people, we shall meet them on the ground not of other people's convictions but of their own, shifting the ground of any argument that they appear to us to state unsoundly. For the study of the philosophical sciences it is useful, because the ability to puzzle on both sides of a subject will make us detect more easily the truth and error about the several points that arise. It has a further use in relation to the principles used in the several sciences. For it is impossible to discuss them at all from the principles proper to the particular science in hand, seeing that the principles are primitive in relation to everything else: it is through reputable opinions about them that these have to be discussed, and this task belongs properly, or most appropriately, to dialectic; for dialectic is a process of criticism wherein lies the path to the principles of all inquiries. (Aristotle 1984, Vol. 1, *Topics* I.2, 101a25–b4)

The first kind of use mentioned in this passage is training (*gymnasia*). It was also mentioned in *Topics* VIII.5 (see above). Practicing dialectical debating will make people more adept at constructing and criticizing arguments.

The second kind of use mentioned occurs in casual encounters (*enteuxeis*). The description given presents us with a kind of mirror image of the examination dialogues: just like the latter, dialectical debates in such casual encounters take place between an expert and a layman, but now the expert is the Questioner, who tries to correct the layman and to convince him of the truth of something by arguing from the latter's own convictions rather than from scientific principles, which would be beyond him.²² The passage does not mention the use of dialectical debates in other kinds of encounters, such as encounters leading to an examination dialogue or encounters with scholars from a competing philosophical school who need to be answered and could be enticed into taking a position in a dialectical debate. In each case of this second kind of use, there will be a difference of opinion and a use of arguments, and so the discussion will be argumentative.

The third kind of use regards the study of the philosophical sciences (*hai kata philosophian epistēmai*). This use corresponds to the earlier mentioned goal of inquiry (*skepsis*). When discussants together investigate a scientific problem, they do not necessarily have a difference of opinion, and therefore a discussion of this type is probative and explorative rather than argumentative. But since the participants may at any time take distinct positions about some issue, it is likely to have embedded argumentative parts. There are actually two kinds of use to be considered under this head. First, by dialectical debates, one may find out what counts for and what against a particular thesis and thus discover the truth about something. Second, dialectical debates may offer a way to (or a way to examine) the first principles of science.²³

We may conclude that dialectical debates are of use in various ways and that discussions following their rules are often, though not always, argumentative, so that the study of these debates is a part of argumentation theory concerned with a special context of argumentation.

²² This interpretation is corroborated by a passage in Aristotle's *Rhetoric* (*Rhet.* I.1, 1355a24–29), which contains a reference to the *Topics*.

²³ The interpretation of the last point is very uncertain.

2.3.3 The *Topoi*

Whereas Book I of the *Topics* introduces fundamental concepts and instruments for the dialectical debate and Book VIII gives strategic advice for debaters, Books II through VII, the so-called middle books, are devoted to the description and discussion of *topoi*. The core meaning of the Greek word *topos* (plural: *topoi*) is “place,” but in the context of dialectic and rhetoric, it has a technical meaning, which is in English sometimes conveyed by the Greek word *topos* and sometimes by the term *topic*. There has been much debate among experts about what precisely a *topos* is supposed to be.²⁴ Yet it seems clear that the function of *topoi* is to help in the construction of arguments. Since it is not immediately clear how “places” would help in constructing arguments, the technical use of the word may be supposed to involve some metaphor. Most likely it derives from the *mnemonic art*, a memorizing technique in which data to be remembered are, in one’s mind, stored at determinate locations (*topoi*) in a mental representation of a complex and ramified site.²⁵ Rubinelli (2009, p. 13) suggests a link with a fourth century military use of the term *topos*, mentioned by Ritoók (1975, pp. 112, 114), in which it denotes a location from which power can be deployed. Indeed, one could say that, similarly, a *topos* in argumentation would be a point of view from which to construct an argument attacking one’s opponent.

Using another metaphor, Brunschwig, in his introduction to his translation of the *Topics*, characterizes a *topos* as *une machine à faire des prémisses à partir d’une conclusion donnée* [a machine to produce premises starting from a given conclusion] (Aristote 1967, p. xxxix), since the function of a *topos* is, given a certain conclusion to be reached, to enable the Questioner to find premises from which this conclusion can be deduced. Just as a machine consists of a number of parts, a *topos* consists of a number of distinct elements.²⁶

In his *Rhetoric*, Aristotle characterizes a *topos* as “something under which many enthymemes fall” (*Rhetoric* II.26, 1403a19, as translated by Slomkowski 1997, p. 43). Since *enthymeme* (*enthymêma*) is what in rhetoric corresponds to *deduction* (*sullogismos*) in dialectic, we may presume him to hold that a *topos* in dialectic can be characterized as something under which many deductions fall.²⁷ This characterization stresses the generality of *topoi*: a lot of deductions exemplify one and the same *topos*. In this respect, *topoi* resemble contemporary argument(ation) schemes. Indeed the system of *topoi* may be looked upon as an ancient system of argument schemes.²⁸

²⁴ See, for instance, de Pater (1965, 1968), Brunschwig in Aristote (1967, 2007), Sainati (1968), Slomkowski (1997), Smith in Aristotle (1997), and Rubinelli (2009).

²⁵ See Solmsen (1929, pp. 171–175).

²⁶ Rubinelli (2009, p. 20) distinguishes six “elements that can occur in the description of a *topos*”: applicability requirements, name, instruction, law, example, and purpose.

²⁷ See Slomkowski (1997, p. 45).

²⁸ For rhetoric, the relation between *topoi* and argument(ation) schemes has been analyzed by Braet (2005).

The central part of a *topos* is a general law (a universal proposition) that can be used in many similar deductions. One may propose that this law be identified with the *topos* itself, but then, of course, it must still be explained how this law figures in the search for (other) premises.²⁹ Another important part of a *topos* is an instruction telling the Questioner that if the conclusion to be reached has certain features, he should investigate whether the prerequisites are fulfilled for deducing the given conclusion by means of the general law provided by the *topos*.³⁰ Below, we give some examples with comments:

(1) A *topos* from contrary terms³¹: Again, if there be posited an accident which has a contrary, look and see if that which admits of the accident will admit of its contrary as well; for the same thing admits of contraries. [Take, for example, the case that] he [the Answerer] has asserted that the faculty of desire is ignorant [an accident]. For if it were capable of ignorance, it would be capable of knowledge [the contrary accident] as well: and this does not seem to be so – I mean that the faculty of desire is capable of knowledge. For purposes, then, of overthrowing a view you should proceed as we have said; but for purposes of establishing one, though the rule [*topos*] will not help you to assert that the accident actually belongs, it will help you to assert that it may possibly belong. For having proved that the thing in question will not admit of the contrary, we shall have proved that the accident neither belongs nor can possibly belong; while on the other hand, if we prove that the contrary belongs, or that the thing is capable of the contrary, we shall not indeed as yet have proved that the accident asserted does belong as well; our proof will merely have gone to this point, that it is possible for it to belong. (Aristotle 1984, Vol. 1, *Topics* II.7, 113a33–35 and 113b3–14)

The description of this *topos* starts with an instruction giving strategic advice to the Questioner: if the Answerer's thesis predicates an accident *P* of a subject *S* ("*S* is (accidentally) *P*"), then the Questioner is to check that *P* has a contrary (say *Q*) and to investigate whether *S* could also be *Q*.³² The instruction is followed by the general law ("the same thing admits of contraries"), which provides also the justification for giving this kind of strategic advice. Next there follow two examples (of which we quoted the second) and some more detailed discussion of the way this *topos* can be applied. This order – first the instruction and then the law followed by examples and further comment – is the usual one in the *Topics*, but, as we shall see, not all these elements are always present. The law can be formulated as follows:

If *P* and *Q* are contrary accidents, and if *S* is *P* or *S* can be *P*, then *S* can be *Q*.

²⁹ According to Slomkowski, a *topos* is a universal proposition that functions as a premise in a deduction (a hypothetical syllogism) (Slomkowski 1997, p. 67).

³⁰ These two parts of a *topos* correspond to what de Pater calls *proposition/formule probative* (*proposition de preuve*) and *règle/formule de recherche* (1965, pp. 115–117; 1968, p. 166).

³¹ This *topos* served as the first example of a *topos* in de Pater (1968, pp. 164–165), and the example about ignorance in the quotation was analyzed by de Pater in the concluding section of his paper (pp. 185–188).

³² An accident may or may not belong to its subject (*Topics* 102b6–7). It is one of the four "predicables" Aristotle distinguishes in the beginning of the *Topics*. See example (5).

This law (which is presumed to be acceptable and therefore to be admitted by the Answerer) can be used as a major premise to deduce either “ S is not- P ” or “ S cannot be P ,” but only if the minor premise “ S cannot be Q ” will also be admitted by the Answerer. As Aristotle notices, it can also be used to construct a deduction for “ S can be Q ” if the Answerer admits either “ S is P ” or “ S can be P .”

(2) A *topos* from contradictory terms: [...] you should look among the contradictories of your terms, reversing the order of their sequence, both when demolishing and when establishing a view; and you should grasp this by means of induction. E.g. if man is an animal, what is not an animal is not a man; and likewise also in other instances of contradictories. For here the sequence is reversed; for animal follows upon man, but not-animal does not follow upon not-man, but the reverse – not-man upon not-animal. In all cases, therefore, a claim of this sort should be made, (e.g.) that if the honourable is pleasant, what is not pleasant is not honourable, while if the latter is not so, neither is the former. Likewise, also, if what is not pleasant is not honourable, then what is honourable is pleasant. (Aristotle 1984, Vol. 1, *Topics* II.8, 113b15–24)

The general law of this *topos*, which is not stated by Aristotle, but indicated by the examples, can be formulated as follows³³:

A is B if and only if not- B is not- A .

This law (or the relevant part of it: either “If A is B , then not- B is not- A ” or the converse implication) can be used as a major premise to construct deductions for “ A is B ” and for “not- B is not- A ” (as well as for their negations), but, again, only if the corresponding minor premise will be admitted by the Answerer. For instance, if the conclusion to be reached is “ A is B ” (e.g., “What is honorable is pleasant”), the minor premise needed would be “not- B is not- A ” (“What is not pleasant is not honorable”). If this minor premise will be admitted by the Answerer as an acceptable premise, the Questioner may complete his deduction. The instruction provided by this *topos* (which is expressed rather concisely) tells the Questioner to investigate if a suitable minor of this kind is available.

(3) A *topos* from greater and lesser degree: [...] see whether a greater degree of the predicate follows a greater degree of the subject: e.g. if pleasure is good, see whether also a greater pleasure is a greater good; and if to do a wrong is evil, see whether also to do a greater wrong is a greater evil. Now this rule [*topos*] is of use for both purposes; for if an increase of the accident follows an increase of the subject, as we have said, clearly the accident belongs; while if it does not follow, the accident does not belong. You should establish this by induction. (Aristotle 1984, Vol. 1, *Topics* II.10, 114b38–115a6)

Here the general law states that “if an increase of the accident follows an increase of the subject [...] the accident belongs; while if it does not follow, the accident does not belong.” It can be formulated as follows:

³³ See Slomkowski (1997, pp. 141–142).

A is B if and only if a greater degree of A is a greater degree of B .

Given an appropriate minor premise, this law can be used to construct deductions “for both purposes,” i.e., for obtaining “ A is B ” or “a greater degree of A is a greater degree of B ” and for obtaining their negations.

(4) Another *topos* from greater and lesser degree: [...] if one predicate is attributed to two subjects, then supposing it does not belong to the subject to which it is the more likely to belong, neither does it belong where it is less likely to belong; while if it does belong where it is less likely to belong, then it belongs as well where it is more likely. (Aristotle 1984, Vol. 1, *Topics* II.10, 115a6–8)

The general law of this *topos* can be rendered as

If it is more likely that A is B than that C is B , then if A is not- B , C is not- B , and if C is B , A is B .³⁴

There is no instruction or example accompanying this *topos*, but it is not hard to see what the Questioner should investigate.

(5) A *topos* from the division of a *genus* into species: Again, if no differentia belonging to the genus is predicated of the given species, neither will the genus be predicated of it; e.g. of soul neither odd nor even is predicated; neither therefore is number. (Aristotle 1984, Vol. 1, *Topics* IV.2, 123a11–14)

This *topos* depends upon the theory of predicables, which tells us there are four ways a predicate B can be predicated of a subject A . If A is B , B can be predicated of A (1) as A 's *definition*, which gives the essence of A (“Man is by *definition* a rational animal”); (2) as (2a) A 's *genus* (“Man has animal as *genus*”), which gives only part of the essence, or (2b) A 's *differentia*³⁵ specifying A within its *genus* (“Man has rationality as *differentia*”), which also gives only part of the essence; (3) as a *property*³⁶ of A , which does not give (a part of) the essence of A but nevertheless characterizes A by being coextensive with it so that A also belongs to B (“Man has the *property* of being a featherless biped”); (4) in other cases as an *accident*.³⁷ The general law of this *topos* can now be formulated as follows³⁸:

If *genus* G is divided into species by exactly the *differentiae* D_1, \dots, D_n and for each D_i ($1 \leq i \leq n$) S is not- D_i , then G is not the *genus* of S .

³⁴ This formulation follows Aristotle's text. An equivalent, but simpler, formulation would be as follows: if it is more likely that A is B than that C is B , then if C is B , A is B .

³⁵ *Differentia* is not counted as a separate predicable, but treated under *genus*.

³⁶ This term has a technical meaning in this context.

³⁷ The theory of predicables is explained by Aristotle in *Topics* I.5–8. The global structure of the *Topics* is based on the predicables: Books II and III deal with *topoi* concerned with accident, Book IV with those concerned with *genus*, Book V with those concerned with property, and Books VI and VII with those concerned with definition.

³⁸ See Brunschwig's analysis in Aristotle (1967, p. XLII).

Again there is no further instruction, but there is a brief example in the passage cited. We may supplement the example by the supposition that the thesis of the Answerer is that number (G) is the *genus* of soul (S). Numbers, however, can be divided into odd numbers (D_1) and even numbers (D_2). But soul is not odd, nor is it even. Getting these three premises admitted will enable the Questioner to refute the Answerer by means of the general law provided by the *topos*.

2.3.4 Debate Instructions³⁹

Having provided a list of *topoi* enabling the Questioner to find the premises he needs to construct the final deduction of his thesis, Aristotle in book VIII of the *Topics* gives some instructions on how to proceed in the actual debate.⁴⁰ The need for giving these instructions follows from the observation that unlike someone who merely thinks for himself, someone who acts as a Questioner in a dialectical debate will have to obtain the premises needed for his conclusion from the Answerer, who is assumed to be reluctant to concede premises that clearly lead to the refutation of his thesis:

Any one who intends to frame questions must, first of all, select the ground from which he should make his attack; secondly, he must frame them and arrange them one by one to himself; thirdly and lastly, he must proceed actually to put them to the other party. Now so far as the selection of his ground is concerned the problem is one alike for the philosopher and the dialectician; but how to go on to arrange his points and frame his questions concerns the dialectician only; for in every problem of that kind a reference to another party is involved. Not so with the philosopher, and the man who is investigating by himself: the premisses of his reasoning, although true and familiar, may be refused by the answerer because they lie too near the original statement and so he foresees what will follow if he grants them; but for this the philosopher does not care. (Aristotle 1984, Vol. 1, *Topics* VIII.1, 155b4–14)

Aristotle advises the Questioner to conceal as carefully as possible in what way and from what premises he will draw his conclusion. This general strategy of *concealment* (*krupsis*) entails tactics concerning the invention, the arrangement, and the formulation of the questions.

As to the invention, Aristotle advises the Questioner not to restrict himself to asking for concessions upon which the deduction of the conclusion is based – the so-called *necessary premises* (*hai anagkaiai* (*protaseis*)) – but to also ask for concessions that do not directly contribute to the refutation of the Answerer's thesis. Of these there are four kinds: premises for induction, premises for adding

³⁹ This subsection is based on Krabbe (2009) and Wagemans (2009).

⁴⁰ We do not want to suggest that Aristotle wrote the books of the *Topics* in this order; it may well have been the other way round.

weight or ornament to the argument, premises specifically for concealment, and premises for clarification (*Topics* VIII.1, 155b20–24, 157a6–13).

As to the arrangement of the questions in an actual debate, Aristotle then advises the Questioner not to ask all of the necessary premises right in the beginning of the debate but rather to keep these at a distance by asking for “more remote” concessions, from which the necessary premises can be derived in a later stage (*Topics* VIII.1, 155b29–30, 156b27–30). Nor should one ask to be granted, one after the other, the premises leading together to one and the same (intermediate) conclusion, but one should mix them with premises for another conclusion in order to confuse the Answerer as to which conclusions one tries to deduce (*Topics* VIII.1, 156a23–26). Aristotle also advises to take into account the propensity of most Answerers to deny a proposed premise at the beginning of the debate and to more easily admit things later. For this reason, the Questioner should ask for the most important premises at the end of the debate. However, as he remarks, with some Answerers, namely, those that are ill-tempered (*duskulos*) or think themselves to be smart (*drimus*), it is the other way round: since they get more and more reluctant to concede anything, the Questioner should ask for the most important premises at the beginning of the debate (*Topics* VIII.1, 156b30–157a1).

As to the formulation of the questions, Aristotle notes that the Answerer will probably be less hesitant to concede a premise (1) when the question regarding that premise is formulated in terms of likeness, (2) when the Questioner has increased his credibility by mentioning now and then an objection to his own thesis, and (3) when the Questioner remarks, in addition to asking a question, that a certain answer is commonly accepted (*Topics* VIII.1, 156b10–23). According to Aristotle, it may also help when the Questioner hides what concession he would like to obtain (the proposed premise or its contradictory) or how important a specific answer is in view of the construction of the final deduction (*Topics* VIII.1, 156b4–9). As to the conclusion of this final deduction, which is the opposite of the thesis the Answerer tries to uphold, Aristotle urges the Questioner not to put forward the conclusion in the form of a question, in order not to give the Answerer the possibility of escaping from being refuted:

The conclusion should not be put in the form of a question; otherwise if he rejects it, it looks as if the deduction has failed. For often, even if it is not put as a question but advanced as a consequence, people deny it, and then those who do not see what follows from the previous admissions do not realize that those who deny it have been refuted; when, then, the one man merely asks it as a question without even saying that it follows, and the other denies it, it looks altogether as if the deduction has failed. (Aristotle 1984, Vol. 1, *Topics* VIII.2, 158a7–13)

Some of these tactics are also listed in *Sophistical refutations* 15, together with some others, such as that you should go fast in order to prevent people from seeing where you are heading and that you should try to incense the Answerer so as to make him less attentive. Perhaps these latter tactics are only meant for purely competitive (contentious, eristic) discussions – which Aristotle does not really champion, but into which truly dialectical discussions may degenerate – but the

ones listed in *Topics* VIII.1 seem rather intended for a kind of dialectic interchange of which Aristotle approves.

That Aristotle recommends these tactics does not mean that in dialectic anything goes: the truly dialectical debate, where there is a common aim in view, remains distinct from the merely competitive (contentious, eristic) kind of debate:

The principle that a man who hinders the common business is a bad partner, clearly applies to an argument as well; for in arguments as well there is a common aim in view except with mere contestants, for these cannot both reach the same goal; for more than one cannot win. It makes no difference whether he effects this as answerer or as questioner; for both he who asks contentious questions is a bad dialectician, and also he who in answering fails to grant the obvious answer or to accept whatever question the questioner wishes to put. (Aristotle 1984, Vol. 1, *Topics* VIII.11, 161a37–b5)

Having given instructions about how the Questioner may further his aim in a dialectical debate, Aristotle gives (in the Chaps. 5–8 of Book VIII of the *Topics*) a number of instructions about what kind of things the Answerer is obliged to grant in order to operate in a correct manner. Here he is at first more focused upon the “common business” (*koinon ergon*) of the discussants to produce good arguments than on the particular aim of the Answerer of upholding his thesis. Thus, he instructs the Answerer not to concede a premise that fails to be more acceptable than the conclusion to be reached by the Questioner, for if he would do so, this would deteriorate the quality of the argument the Questioner is going to construct (*Topics* VIII.5).⁴¹ Since these instructions actually require the Answerer to assist the Questioner in constructing a good argument, and thus to contribute to his own refutation by a good argument, they can be interpreted as rules that the Answerer has to comply with in order for the dialectical debate to be carried on as a maximally cooperative and non-eristic pursuit.

Some of the instructions for the Answerer, however, seem to be intended as tactical advice for the Answerer to accomplish his aim – opposed to the aim of the Questioner – of maintaining his thesis and avoiding refutation, albeit in a truly dialectical (i.e., a noncontentious, non-eristic) way.⁴² For instance, Aristotle urges the Answerer to make use of his right to ask for clarification in case he does not understand the question and to withdraw concessions made earlier in the debate in case he did not notice, at the time it was asked, that the question contained an ambiguity (*Topics* VIII.7). Further, Aristotle advises the Answerer to prepare for an upcoming debate by exploring the ways in which the thesis he wishes to defend can be attacked (*Topics* VIII.9). By doing so, the Answerer may find out how to oppose the premises from which the Questioner in the actual debate will try to deduce the opposite thesis.

Once the Questioner has obtained his premises, the Answerer may still attempt to prevent the Questioner from drawing a conclusion. In Chap. VIII.10 of the

⁴¹ A good argument must, according to Aristotle, have premises that are more acceptable and more familiar than its conclusion (Włodarczyk 2000, p. 156).

⁴² Aristotle discusses tactics for the Answerer also in *Sophistical refutations* 17.

Topics, Aristotle mentions four ways in which the Answerer may try to do so: (1) He may try to do so by “demolishing the point on which the falsity that comes about depends” (Aristotle 1984, Vol. 1, *Topics* VIII.10, 161a2), namely, by showing why the reasoning would be fallacious (this is called giving a *solution*).⁴³ (2) He may try to do so by “stating an objection directed against the questioner” (*ibidem*, 161a2–3), namely, by, though not giving a solution, making it impossible for the Questioner to continue with the argument. (3) Further “one may object to the questions asked” (*ibidem*, 161a5), namely, by pointing out that as yet no conclusion follows (whereas a conclusion might follow with an additional premise): in this case, the Questioner may continue. (4) “The fourth and worst kind of objection is that which is directed to the time allowed for discussion; for some people bring objections of a kind which would take longer to answer than the length of the discussion in hand” (*ibidem*, 161a9–12). Aristotle seems to favor the first of these possibilities: “There are then, as we said, four ways of making objections; but of them the first alone is a solution: the others are just hindrances and stumbling-blocks to prevent the conclusions” (*ibidem*, 161a13–5).

There is an obvious tension in Aristotle's instructions for the Questioner and the Answerer mentioned above. Sometimes these instructions seem to set a standard of reasonable and cooperative behavior; at other times they propound quite unreasonable and competitive tactics that are more appropriate for eristic wrangling than for a philosophical enterprise. Since Aristotle distinguishes between truly dialectical and eristic discussions, and considers those discussants that are uncooperative and contentious in their behavior as “bad dialecticians,” one may wonder why he chose to admit so much contentiousness in his truly dialectical debates. The bottom line, however, is that some contentious (competitive) elements are unavoidable:

Those [propositions, *protaseis*] which are used to conceal the conclusion serve a contentious purpose; but inasmuch as an undertaking of this sort is always conducted against another person, we are obliged to employ them as well. (Aristotle 1984, Vol. 1, *Topics* VIII.1, 155b26–28)

How much contentiousness you need may depend on the circumstances of the debate and on the character of your opponent (who may only be thinking of himself as smart or could be highly ill-tempered). But in a debate you need to apply some contentious tactics, just because you are not the only person involved. As a good dialectician, you would not use more contentious means than necessary, so as not to become yourself the one who spoils the debate.

If the Questioner commits a fallacy when pretending to draw a conclusion from certain premises, the Answerer will not behave contentiously at all if he uses the first of the four ways mentioned above of trying to prevent the Questioner from drawing a conclusion, by giving a solution. To expose the fallacy would indeed be a matter of justified self-defense and would at the same time

⁴³ For the concept of *solution* (*lusis*), see the end of Sect. 2.4.

contribute to the quality of the debate. Aristotle elaborates on this kind of situation by presenting a list of fallacies and discussing their solutions.

2.4 Aristotle's Theory of Fallacies

Aristotle was the first to make a systematic study of fallacies. He devoted a whole volume to the subject, *Sophistical refutations*,⁴⁴ the core of which consists of a list of thirteen types of *sophistical refutation* with explanations, examples (we counted 131 of them), and solutions. Another list of nine types can be found in *Rhetoric* II.24 (see Sect. 2.8).⁴⁵ Since *Sophistical refutations* is closely related to the *Topics*, Aristotle's theory of fallacies as presented in *Sophistical refutations* is part and parcel of his theory of dialectic, and the fallacies he discusses must be interpreted in a dialectical context.⁴⁶

2.4.1 Aristotle's Concept of Fallacy

What concept of fallacy does Aristotle have? He speaks of incorrect argument (*pseudês logos*), paralogism (*paralogismos*), sophistical/eristic deduction (*sophistikos/eristikos sullogismos*), sophistical refutation (*sophistikos elegchos*), eristic argument (*eristikos logos*), etc. These terms are not synonymous, but neither are the distinctions between them always clear. In *Topics* VIII.12, however, we are told that an argument can be incorrect (*pseudês*) on four accounts:

- (1) *Inconclusiveness* (eristic deductions,⁴⁷ yielding sophistical refutations): the argument merely seems to reach a conclusion. Most fallacies of Aristotle's list of 13 belong to this group.
- (2) *Irrelevant conclusion* (which also yields sophistical refutations): the argument reaches a conclusion, but not the conclusion required in the circumstances.⁴⁸ For instance, if a thesis *T* is to be refuted, the conclusion is similar to, but not identical to, a denial of *T*. Or the argument correctly derives an impossibility from *T* and some other conceded premises, but is mistaken in blaming *T* for it,

⁴⁴ Greek: *Sophistikoi elegchoi*, Latin: *Sophistici elenchi*; also used as a title is *On sophistical refutations* (Greek: *Peri tôn sophistikôn elegchôn*, Latin: *De sophisticis elenchis*).

⁴⁵ Besides, Aristotle discusses the fallacy of begging the question in *Topics* VIII.11, 161b11–18, and VIII.13, 162b31–163a13, and also in *Prior Analytics* I.24 and II.16 and in *Posterior analytics* I.3 (on circular proof). The fallacy of non-cause he also discusses in *Prior Analytics* II.17.

⁴⁶ There is some discussion about the proper extent of a dialectical (versus a more logical) interpretation of the fallacies in *Sophistical refutations* (Hintikka 1987, 1997; Woods and Hansen 1997).

⁴⁷ Aristotle seems to have only deductive arguments in mind here. Notice that these eristic deductions are actually no deductions at all; as little as sophistical refutations are refutations.

⁴⁸ Presumably, an incorrect argument of type (2) *seems* to reach the required conclusion.

English	Greek	Latin
A. Dependent on the expression/ (the use of) language	<i>para tēn lexin</i>	<i>in dictione</i>
1. Homonymy or equivocation	<i>homōnumia</i>	<i>aequivocatio</i>
2. Amphiboly	<i>amphibolia</i>	<i>amphibologia</i>
3. Composition or combination (of words)	<i>sunthesis</i>	<i>compositio</i>
4. Division (of words)	<i>diairesis</i>	<i>divisio</i>
5. Accent or intonation	<i>prosōidia</i>	<i>accentus</i>
6. Form of expression or figure of speech	<i>schēma lexeōs</i>	<i>figura dictionis</i>
B. Independent of the expression/ (the use of) language	<i>exō tēs lexeōs</i>	<i>extra dictionem</i>
7. Accident	<i>para to sumbebêkos</i>	<i>fallacia accidentis</i>
8. <i>Secundum quid</i>	<i>para to pēi kai haplōs</i>	<i>secundum quid et simpliciter</i>
9. <i>Ignoratio elenchi</i> or ignorance/misconception of refutation	<i>para tēn tou elegchou agnoian</i>	<i>ignoratio elenchi</i>
10. Consequent or consequence	<i>para to hepomenon</i>	<i>fallacia consequentis</i>
11. Begging the question	<i>para to to en archēi aiteisthai (lambanein)</i>	<i>petitio principii</i>
12. Non-cause (as cause) or false cause	<i>para to mê aition hōs aition tithenai</i>	<i>non causa ut/pro causa</i>
13. Many questions	<i>para to ta pleiō erôtēmata hen poiein</i>	<i>secundum plures interrogationes ut unam</i>

Fig. 2.1 Aristotle's list of fallacies

so that the impossible conclusion is irrelevant. These fallacies correspond to examples of *secundum quid* (or of *ignoratio elenchi*) and of non-cause on Aristotle's list (see Fig. 2.1).

- (3) *Wrong method* (another kind of eristic deduction⁴⁹): the argument reaches a relevant conclusion, but by a wrong method, seeming to be using the right method. This group comprises (a) arguments that seem to be in accordance with a scientific discipline, but are not, for instance, arguments that merely seem to constitute a medical (or a geometrical) argument but actually use concepts or principles that are foreign to the discipline (see *Soph. ref.* 11), and (b) arguments that merely seem to be dialectical, for instance, because some of their premises merely seem to be acceptable.

⁴⁹ Eristic deductions in this group are indeed deductions.

- (4) *False premise*: even if an argument reaches a relevant conclusion by the right method, there could be one or more false premises (the concept of *being in accordance with a scientific discipline* is not to be understood as excluding all error, and of course “acceptable premises” could be false). Examples are false proofs in geometry in which one uses geometrical methods but draws a wrong line somewhere.

Incorrect argument appears to be Aristotle’s most general term in this context. The incorrect arguments of groups (1), (2), and (4) are also called *paralogisms*.⁵⁰ It may also be seen that eristic or sophistical arguments or refutations comprise groups (1), (2), and (3) and thus overlap with the paralogisms.⁵¹ Most of the exposé in *Sophistical refutations* deals with the fallacies of groups (1) and (2) (Aristotle’s list). In this chapter, we shall limit ourselves to a brief discussion of these fallacies.⁵²

2.4.2 Aristotle’s List

The items on Aristotle’s list are types of sophistical refutation: they seem to be refutations, but are not really refutations. A refutation (*elegchos*), in this context, is a deductive argument from conceded premises that concludes to the contradictory of the thesis of the Answerer in a dialectical exchange. A deductive argument or deduction (*sullogismos*) is defined as in the *Topics*: not only must the premises necessitate the conclusion, but also none of them may be superfluous and all of them must be different from the conclusion. An alleged refutation then may either be based on a non-deductive argument (which seems to be deductive) or have a wrong conclusion (which seems to be the required conclusion) or have a premise of the wrong kind (which premise, however, seems alright). This division assigns each sophistical refutation to either group (1), (2), or (3b) above. Aristotle, however,

⁵⁰ For group (3), evidence that Aristotle would call them paralogisms is scanty.

⁵¹ See *Topics* I.1, *Soph. ref.* 8 and 11.

⁵² For more information about Aristotle’s list and the further contents of *Sophistical refutations*, we refer to Hamblin (1970, Chap. 2). For a brief exposition, see Woods (1999). The reader may also consult the handbook article on Aristotle’s early logic by Woods and Irvine (2004, esp. Sect. 12). A brief summary of *Sophistical refutations* can be found in Krabbe (2012). There are also useful introductions by translators (into other languages than English): Dorion (Aristote 1995), Fait (Aristotele 2007), and Hasper and Krabbe (Aristoteles 2014). Schreiber (2003) dedicated a critical monograph to Aristotle’s list, with detailed discussions of the separate fallacies, in which Schreiber reconstructs (and corrects) the Aristotelian system by showing how each fallacy arises from false presuppositions about language or ontology. Hasper (2013) proposes a reconstruction of Aristotle’s completeness claim (in *Soph. ref.* 8) for his list of fallacies by analyzing the dialectical task of achieving a refutation into a limited number of dialectical acts, like using statements, citing statements, asking questions, and drawing inferences, which each involve some correctness conditions. See on the concept of a sophistical refutation also Botting (2012).

classifies the sophistical refutations in a different way: those that depend on the “use of language” (*lexis*) and those that do not. Distinctive for the fallacies of the first group seems to be that their deceptive character is due to matters of formulation. According to Hamblin, they result from the imperfections of natural language:

What does distinguish the refutations dependent on language is that they all arise from the fact that language is an imperfect instrument for the expression of thoughts: the others could, in theory, arise even in a perfect language. (Hamblin 1970, p. 81)

According to Aristotle, it can be shown by induction and by deduction that there are exactly six kinds of sophistical refutations that belong to this group (*Soph. ref.* 4, 165b27–30). Besides, there are seven kinds that do not depend on the way language is used. These 13 types of fallacy are listed in Fig. 2.1, together with their Greek and Latin names.

The fallacies that depend on the use of language arise because one utterance can carry more than one message. Consequently, the Questioner's conclusion may only *seem* to have been deduced from the propositions granted by the Answerer – if the Questioner interprets the Answerer's utterances in a way different than the Answerer does – or only *seem* to be the contradictory of the Answerer's thesis. Such discrepancies may be brought about on two accounts⁵³: either (a) because an utterance corresponds to two (or more) different sentences (fallacies of composition, division, and accent) or (b) because – even though the utterance may correspond to only one sentence – this sentence is ambiguous (fallacies of equivocation, amphiboly, and form of expression) (*Soph. ref.* 6, 168a23–28). The fallacies may originate at the level of morphemes, of words, or of sentences.

- (1) *Equivocation*. This is a type of fallacy of group (b), originating at the level of words. By using an ambiguous term in a question, the question itself will become ambiguous, and the Answerer may grant the premise asked for taking the question in one sense, whereas the Questioner uses it in another sense as he deduces his conclusion. If the ambiguous term occurs in the theses of the Answerer and of the Questioner, it may be that it has a different sense in each thesis, so that there is no real contradiction.
- (2) *Amphiboly*. If a sentence contains no ambiguous words, it may still be an ambiguous sentence because it allows two ways of being parsed. The fallacy of amphiboly is the corresponding fallacy of group (b) originating at the level of sentences.
- (3) *Composition*. The fallacies of composition (or combination) and division in *Sophistical refutations* are markedly different from their contemporary namesakes, which are fallacies of reasoning from parts to wholes and

⁵³ Such classificatory insights must constitute the deductive proof (showing that there are exactly six kinds of sophistical refutation dependent on the use of language) that, as we saw, Aristotle alludes to in *Soph. ref.* 4, 165b27–30.

vice versa.⁵⁴ Here they are fallacies dependent on the use of language and concern the groupings of words. For instance, in an utterance of “[he is] being able to walk while sitting” (Aristotle 2012, *Soph. ref.* 4, 166a23–24), words can be grouped either as “[he is] ((being able to (walk))(while sitting))” (divided reading: “while sitting” is placed at the same level as “being able to”) or as “[he is] (being able to ((walk) (while sitting)))” (composed reading: “while sitting” is brought into the scope of “being able to”). Aristotle considered these two readings not as readings of an ambiguous sentence but as two different sentences. Therefore, the fallacies of composition and division are fallacies of group (a) and must be distinguished from the fallacy of amphiboly – even though they all originate at the level of sentences. In the present example, the divided reading is unproblematic, whereas the composed reading is absurd and can be misused by the Questioner. A Questioner’s shifting from the divided to the composed reading, then, constitutes the fallacy of composition.

- (4) *Division*. Conversely, a Questioner’s shifting from the composed to the divided reading constitutes the fallacy of division. So here the composed reading will be unproblematic and the divided reading will be absurd.
- (5) *Accent*. Ancient Greek was a tone language and the accents of words were tones, not stresses: a difference of pitch could suffice to distinguish two words. In some cases, two words that were indistinguishable when written, or sloppily pronounced, could be distinguished by their different accents, if pronounced correctly. Consequently, if an utterance of a sentence *S* would contain such a word, the utterance could sometimes be taken to correspond also to another sentence *S'*, and thus to carry two distinct messages: *S* and *S'*. If the Questioner takes advantage of this fact by shifting from one message to the other one, he will commit the fallacy of accent, which is a fallacy of group (a), originating at the level of words.
- (6) *Form of expression*. This is the only fallacy originating at the level of morphemes. According to Aristotle, it is a fallacy of ambiguity (group (b)). But whereas in fallacies of equivocation and amphiboly there are – from the point of view of linguistics – two legitimate readings involved, examples of the fallacy of form of expression usually display a legitimate and an illegitimate reading. Ancient Greek has many morphemes that allow one to infer that a designated entity belongs to a specific category (e.g., the category of individuals, of qualities, of quantities, of actions, of affections (states of being affected), etc.). For instance, verbs with active endings denote actions, and verbs with a passive ending denote affections. There are, however, many exceptions, so that interpretations based on such features can yield an illegitimate reading. Furthermore, the general inclination to regard each entity as an individual makes people misinterpret phrases referring to entities of other categories as referring to individuals. Take the following example:

⁵⁴ Examples of the contemporary fallacies of composition and division are, however, found in the *Rhetoric* (see Sect. 2.8).

"If what someone has he later does not have, he has lost it. For someone who has lost one die alone, will not have ten dice." (Aristotle 2012, *Soph. ref.* 22, 178a29–31)

This tersely expressed example may be reconstructed as follows:

If someone no longer has what he once had, do we say that he has lost it?
 Yes, thus we may define what it means to lose something.
 Suppose, John has ten dice and loses just one of them. In that case, wouldn't John no longer have ten dice, whereas he once had them?
 Exactly.
 So, according to our definition, John would have lost ten dice?
 Certainly.
 But we supposed he lost just one of them!
 Good grief! (Adapted from Krabbe 2012, p. 246)

The fallacy hinges on misinterpreting "ten dice" as an individual instead of a quantity. Since "what" and "it" in the premise "If someone no longer has what he once had, he has lost it" refer to the category of individuals, substituting the term "ten dice" for them requires this term to be interpreted as denoting an individual.⁵⁵

The six fallacies discussed thus far are those that depend on the use of language. We now turn to the fallacies that are independent of the use of language.

- (7) *Accident*. This is a fallacy of deduction. If it is granted that some entity x has property y (y is called an *accident*⁵⁶ of x) and y has property z , one would commit this fallacy if one pretended to deduce from these premises that x has property z . For instance, if Coriscus (x) is a man (y) and man (y) is different from Coriscus (z), it does not follow that Coriscus (x) is different from Coriscus (z). Similarly, from the premises x has property y and x has property z , one cannot deduce that y has property z . For instance, if Socrates (x) is a man (y) and Socrates (x) is different from Coriscus (z), it does not follow that man (y) is different from Coriscus (z).⁵⁷

Another example of the fallacy of accident⁵⁸ can be found in Plato's *Euthydemus*. The speakers are the eristic debater Dionysodorus (D) and a spectator named Ctesippus (C):

⁵⁵ Another way to analyse this case is to say that "what" and "it" are misinterpreted as referring also to quantities (Krabbe 2012, pp. 246–247). According to Krabbe (2012, p. 247, see also 1998), "the fallacy of form of expression, which may at first seem a bit outlandish, can be connected with the twentieth century discussion about Russell's and Wittgenstein's distinction between the apparent and the real logical form of a sentence and Ryle's concept of a systematically misleading expression [. . .]."

⁵⁶ The meaning of *accident* varies, but here it may stand for just any property predicated without further specification of the mode of predication. The term *property* is here used nontechnically: it does not refer to the predicable so called.

⁵⁷ See *Soph. ref.* 5, 166b28–36. The point is not that "man is different from Coriscus" would not be true but that, even if it is true, it does not follow from the premises.

⁵⁸ Aristotle alludes to it in *Soph. ref.* 24, 179a34–35.

- D: You will admit all this [*among other things that Ctesippus' father is a dog*], if you answer my questions. Tell me, have you got a dog?
- C: Yes, and a brute of one too.
- D: And has he got puppies?
- C: Yes indeed, and they are just like him.
- D: And so the dog is their father?
- C: Yes, I saw him mounting the bitch myself.
- D: Well then: isn't the dog yours?
- C: Certainly.
- D: Then since he is a father and is yours, the dog turns out to be your father, and you are the brother of the puppies, aren't you? [*Quickly to keep the other from cutting in:*]
Just answer me one more small question: Do you beat this dog of yours?
- C (*laughing*): Heavens yes, since I can't beat you!
- D: Then do you beat your own father?
- (Adapted from Plato 1997, *Euthydemus* 298d–e)

The fallacy is committed when D says: “[...] since he is a father and is yours, the dog turns out to be your father [...]” With some effort, it can be reconstructed in terms of the schemas given above: this dog (x) is this father (y) and this dog (x) is yours (z), therefore (fallacy of accident) this father (y) is yours (z); in other words, this father is your father and (since this dog is this father), by a second fallacy of accident, this dog is your father.

- (8) *Secundum quid*. The phrase *secundum quid* translates the Greek *pêi* (in a certain respect, with a qualification), but as can be seen from Fig. 2.1, the full name of the fallacy is longer. It can be rendered as the “fallacy of saying things with or without adding a qualification.” If, for instance, the Answerer has granted that a black man is white of teeth, he is held to have admitted that a black man is both white and nonwhite.⁵⁹ But it is incorrect to omit the qualification “of teeth.” Adding a qualification can also be incorrect: “[...] illness is bad, but not getting rid of illness” (Aristotle 2012, *Soph. ref.* 25, 180b20–21). Here “getting rid of x” is a qualification that is incorrectly added if one assumes that who admits that illness is bad has also admitted that getting rid of illness is bad. The fallacy may not only lead to a deduction that only *seems* to be based upon the premises admitted by the Answerer but also to one that only *seems* to yield the contradictory of the thesis of the Answerer.

In the later tradition, the designation *secundum quid* has shifted its meaning so as to denote illicit reasoning from instances to universal propositions, also known as *hasty generalization*. It is an example of a fallacy label that has been kept in use, while its contents changed beyond recognition.⁶⁰

- (9) *Ignoratio elenchi*. The phrase translates the Greek *tou elegchou agnoia* (ignorance of refutation). It is the fallacy of presenting an argument that seems to be a refutation of the Answerer's thesis but actually violates one of the conditions of the definition of refutation (which include those of deduction). Most

⁵⁹ See *Soph. ref.* 5, 167a7–9.

⁶⁰ Woods (1993) points out how the new meaning can be tied to the old meaning.

examples Aristotle adduces here are similar to those that illustrate *secundum quid*. For instance:

Some people, omitting one of the things mentioned, appear to give a refutation, for example, the argument that the same thing is the double and not the double. For two is the double of one, but not the double of three. Or if the same thing is the double and not the double of the same thing, but not in the same respect – double in length, but not double in width. Or if it is the double and not the double of the same thing, in the same respect and in the same way, but not at the same time; because of that it is an apparent refutation. (Aristotle 2012, *Soph. ref.* 5, 167a28–34)

The given characterization of *ignoratio elenchi* permits Aristotle to reduce (in *Soph. ref.* 6) all other sophistical refutations of his list to special cases of this fallacy by linking them to specific conditions of the definition of refutation. A similar analysis brings him (in *Soph. ref.* 8) to claim completeness for his list (which no longer includes *ignoratio elenchi*)⁶¹:

Thus we should know on how many grounds fallacies come about, for they could not depend on more; they will all depend on those mentioned. (Aristotle 2012, *Soph. ref.* 8, 170a9–11)

In the later tradition, the designation *ignoratio elenchi* has shifted its meaning so as to denote arguments with an irrelevant conclusion (those of group (2) of the incorrect arguments described in *Topics* VIII.12). This modern notion extends beyond a context of refutation in a dialectical discussion between a Questioner and an Answerer. On the other hand, it does not encompass all kinds of sophistical refutation.

- (10) *Consequent*. The fallacy of consequent is, according to Aristotle, a subspecies of the fallacy of accident. It comprises not just the fallacy of asserting the consequent but also denying the antecedent, universally generalized versions of these two fallacies, and in general any conversion of the relation of consequence. Examples are:

[...] since the soil's being drenched follows upon it having rained, we take it that if the soil is drenched, it has rained. But that is not necessary. And in rhetoric, sign-proofs are based on the consequences. For, wanting to show that someone is an adulterer, they seize on the consequence: that he is nicely dressed or that he is seen roaming around at night. However, these things apply to many people while the accusation does not. Similarly with deductive arguments, for example, the argument of Melissus that the universe is unlimited, having secured that the universe has not come to be (for nothing can come to be from what is not) and that what comes to be comes to be from a beginning; now, if the universe has not come to be, it does not

⁶¹ The word *fallacies* (*paralogismoî*) in the completeness claim obviously refers to the sophistical refutations and not to proofs with a false premise in science – group (4) in *Topics* VIII.12 (see above). The definition of refutation implied in Aristotle's sketch of a completeness proof (*Soph. ref.* 8, 169b40–170a11) seems to be a refined version of that given in *Soph. ref.* 1 (Hasper 2013).

have a beginning either, so that it is unlimited. However, this does not necessarily follow. For it is not the case that if everything that comes to be has a beginning, then also everything that has a beginning has come to be, just as it is not true that if someone who has a fever is hot, then also someone who is hot must have a fever. (Aristotle 2012, *Soph. ref.* 5, 167b6–20)

- (11) *Begging the question*. The definition of deduction does not allow any premise to be identical to the conclusion. Aristotle does not give any examples in *Sophistical refutations*, but from a discussion in *Topics* VIII.13, it is clear that begging the question is not limited to the case of a premise being identical, or equivalent by substitution of synonyms, to the conclusion. It may also be that there is some other relation of equivalence, or that the premise expresses a special case of what the conclusion universally asserts, or conversely that the conclusion expresses a special case of what the premise universally asserts, or that the premise asserts a conjunctive part of the conclusion. Not all of these cases would nowadays be deemed fallacious.
- (12) *Non-cause*. The name of this fallacy does not refer to physical causality but to logical grounds. It refers to a fallacious use of a *reductio ad absurdum* (or *ad impossibile*)⁶² argument in which (1) an impossibility is derived from a number of conceded premises, but (2) the wrong premise is blamed for yielding the impossibility and consequently denied.⁶³ This may occur when the impossible conclusion does not depend at all on the premise blamed and denied, as in the following example:

... soul and life are not the same. For if coming to be is the contrary of passing away, then also a form of coming to be will be the contrary of a form of passing away. But death is a form of passing away and contrary to life, so that life is a coming to be and to live is to come to be. That, however, is impossible. Therefore soul and life are not the same. Surely this has not been deduced, for the impossibility follows even if one does not say that life is the same as soul, but only that life is the contrary of death, which is a form of passing away, and that coming to be is the contrary of passing away. (Aristotle 2012, *Soph. ref.* 5, 167b27–34)

The premise to blame is probably that life (instead of birth) is contrary to death.

- (13) *Many questions*. The Questioner is to obtain his premises by asking the Answerer to either affirm or deny certain propositions. These propositions are each to ascribe one attribute to one thing (“Does *S* have attribute *P*?”) and not several attributes to one thing (“Does *S* have attributes *P* and *Q*?”) or one

⁶² Some authors distinguish between *reductio ad absurdum* and *reductio ad impossibile*, but there is no uniform way in which they make this distinction. Yet it makes a difference whether the absurdity reached by the *reductio* is a logical contradiction or something merely accepted as false or extremely implausible. Aristotle (2012, *Soph. ref.* 5, 167b23) says that the fallacy of non-cause occurs “in deductions of an impossibility” (*en tois eis to adunaton sullogismois*).

⁶³ To blame one specific premise, it must of course be assumed that the other premises – as well as the impossibility of the conclusion – are beyond suspicion and that the deduction is impeccable.

attribute to more than one thing (“Do *S* and *T* have attribute *P*?”) (*Soph. ref.* 30, 181a36–39). The latter two kinds of question are improper and a refutation that depends on them would be sophistical. So would a refutation depending on the following question:

... concerning things of which some are good and others are not, ‘Are all of them good or not good?’ (Aristotle 2012, *Soph. ref.* 5, 168a7–8)

2.4.3 Solutions of Fallacies

The second half of *Sophistical refutations* is concerned with tactics for the Answerer. Aristotle concentrates in particular on the question of how the Answerer should react when confronted with a sophistical refutation. Ideally, the Answerer should provide a solution on the spot, i.e., he should point out the fallacy and provide an explanation of what went wrong – Aristotle realizes that this may be difficult in the heat of the debate (*Soph. ref.* 18, 177a6–8).

There is a strict concept of solution, solution directed at the argument (*pros ton logon*), and also a more relaxed concept, solution directed at the Questioner or at the person (*pros ton erôtônta*, *pros ton anthrôpon*). According to the strict concept of solution, there is for each case a unique theoretically grounded solution (*Soph. ref.* 24, 179b18, 23–24). Further, “arguments depending on the same point have the same solution” (Aristotle 2012, *Soph. ref.* 20, 177b31–32), and a true solution must be such that if the denial of the solution of an argument is added to the premises, the resulting argument becomes unsolvable (*Soph. ref.* 22, 178b16–21).⁶⁴ According to the more relaxed concept, showing the conclusion to be false without pinpointing and blaming any particular premise can be a solution (*Soph. ref.* 18, 176b40). Also there may sometimes be more than one solution (*Soph. ref.* 30, 181b19).

The concept of a solution directed at the person rather than at the argument is, according to Nuchelmans (1993), one of the four Aristotelian roots of the *argumentum ad hominem*, which is nowadays mostly regarded as a kind of fallacy.⁶⁵ As we saw, in Aristotle, the *ad hominem* solutions need not be fallacious but constitute inferior tactics for defusing fallacies.

⁶⁴ For instance, if the fallacy is brought about by the ambiguity of some term *t*, adding the premise that *t* has always the same meaning makes the argument unsolvable (except, of course, by demolishing this very premise).

⁶⁵ The other three roots are (1) Aristotle's criticism, in *Rhetoric* I.1, of conceptions of rhetoric “that one-sidedly concentrate on features which lie outside the actual case,” such as “the person of the disputant” (Nuchelmans 1993, p. 43); (2) Aristotle's remarks about arguments starting from what is admitted by one's opponent, such as the critical examination (peirastic) arguments mentioned in *Soph. ref.* 2; and (3) proofs relative to a particular person that can, for instance, be used against someone denying the law of noncontradiction, as in Aristotle's *Metaphysics* IX.5.

2.5 Cicero and Boethius on Topics (*Loci*)

After Aristotle, the tradition of dialectic continued in commentaries on the *Topics* and *Sophistical refutations* as well as in contributions of a more original character.⁶⁶ Several heads of the Peripatetic school founded by Aristotle showed an interest in dialectic. Among them are Theophrastus of Eresus (ca. 371–287 BC) and Strato of Lampsacus (ca. 335–269 BC), of which philosophers we do not possess any specific writings on dialectic, and Alexander of Aphrodisias (*floruit* AD 200), whose commentary on the *Topics*, entitled *In Aristotelis Topicorum libros octo commentaria* [Commentaries on the eight books of Aristotle's *Topics*], has been of considerable influence on later scholars and who presumably also wrote a commentary on Aristotle's *Sophistic refutations*.

The most important works on dialectic after Aristotle have, however, been written by two Roman scholars. The first one is Cicero (106–43 BC), who was born in Arpinum (in Latium) and later went to Rome, where he became a successful lawyer and politician. He was murdered, after having been declared an enemy of the state, by his political rivals Mark Antony and Octavian (Augustus). His head and hands were nailed to the rostra, the place in Rome where he used to deliver his speeches. A great many of his works – speeches, philosophical and rhetorical works, and letters – have survived.

The second scholar who has written influential works on dialectic is Boethius (ca. 480–ca. 525). Boethius was born in Rome and reached the rank of consul in 510. After a successful career in public life under the protection of King Theodoric the Ostrogoth, he was later suspected by the King of conspiracy and put to death. Apart from the famous *Consolation of philosophy*, Boethius wrote treatises on theology, mathematics, music, and logic. As to the latter subject, he also produced translations of and commentaries on most of Aristotle's works on logic, on Porphyry's *Isagoge* [Introduction], which is an introduction to Aristotle's *Categories*, and on Cicero's *Topica* [Topics]. Boethius has had an enormous impact on medieval philosophy.

Given the importance of the notion of a topic (Greek: *topos*, Latin: *locus*) in the dialectical as well as the rhetorical tradition, we will now discuss Cicero's and Boethius' views on the topics in more detail. Cicero mentions the term *locus* in an unfinished treatise, entitled *De inventione* [On invention]. He discusses Aristotle's topics at greater length in *De oratore* [On the orator] as well as in his *Topica*. In our description of Cicero's view on the *loci*, we shall focus on the latter two works. Boethius wrote two treatises on the subject. The first one is a fairly elementary work entitled *In Ciceronis Topica* [On Cicero's *Topics*], which is a commentary on Cicero's last treatise about the subject. The second one is a concise but more advanced study entitled *De topicis differentiis* or *De differentiis topicis* [On topical distinctions]. In our description of Boethius' view on the *loci*, we shall focus on the latter work.

⁶⁶ This section is based on Rubinelli (2009) and Stump's essays on the text in Boethius (1978).

2.5.1 Cicero's View of *Loci*

In Cicero's treatise *De oratore*, *loci* are defined as "the dwelling places of all arguments" (II, 162). As to the application of *loci*, it is noted that the speaker may use them to find arguments in a wide variety of contexts: "But Aristotle, whom I admire most of all, laid out certain *loci* from which all argumentation may be found, not just for discussions among philosophers, but also for the kind of speech we use in court cases" (II, 152). In the same treatise, Cicero provides a list of *loci* consisting of two main types: those "derived from the essential nature of the matter at hand" and those "taken from outside" (II, 163–173). The first main type is further divided into four subtypes, whereas the second main type remains unspecified. Since the list in *De oratore* is almost identical to the one Cicero provides in his *Topica*, we will continue our discussion with a reconstruction of his view on the *loci* as they are presented in the latter work.

Unlike *De oratore*, Cicero's *Topica* is specifically dedicated to the *loci*. The *Topica* can be characterized as a manual for finding arguments. It consists of a general introduction of the subject, a concise treatment of the *loci*, a more elaborate treatment of the same *loci*, an explanation of different types of questions in juridical disputes, and an explanation of the application of the *loci* in relation to these types of question as well as in relation to the rhetorical doctrines of finding the appropriate reaction to an accusation (*status* theory) and the parts of a speech (*partes orationis*).

The fact that the *loci* are treated twice – first concisely and then more elaborately – has led scholars to think that Cicero wrote the work in a hurry and did not pay much attention to its composition. This impression is reinforced by the fact that some parts of the *Topica* seem to be taken from earlier writings. The concise treatment of the *loci* is a somewhat extended version of his treatment of the same subject in *De oratore*, and the explanation of different types of questions is adumbrated in *De oratore* III, 111ff. as well as in Cicero's *Partitiones oratoriae* [Arrangements of rhetoric], 61ff.

The *Topica* is dedicated to the jurist Trebatius, to whom Cicero in the beginning of the work explains how *loci* are of help in finding arguments as well as judging them. Since the passage is of historical as well as terminological interest, we quote it in full:

Every systematic treatment of argumentation has two branches, one concerned with invention of arguments and the other with judgement of their validity; Aristotle was the founder of both in my opinion. The Stoics have worked in only one of the two fields. That is to say, they have followed diligently the ways of judgement by means of the science which they call *dialektikê* (dialectic), but they have totally neglected the art which is called *topikê* (topics), an art which is both more useful and certainly prior in order of nature. For my part, I shall begin with the earlier, since both are useful in the highest degree, and I intend to follow up both, if I have leisure. A comparison may help: It is easy to find things that are hidden if the hiding place is pointed out and marked; similarly if we wish to track down some argument we ought to know the places or topics: for that is the name given by Aristotle to the "regions", as it were, from which arguments are drawn. Accordingly, we may define a topic as the region of an argument, and an argument as a course of reasoning which firmly establishes a matter about which there is some doubt. (Cicero 2006, *Topica* 6–8)

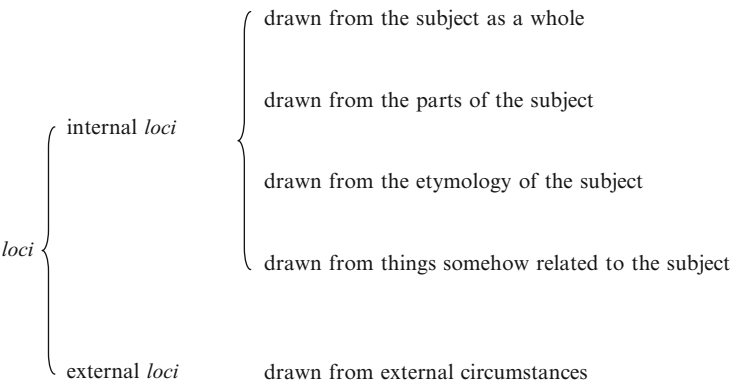


Fig. 2.2 Cicero’s basic classification of loci

As to the *loci* themselves, Cicero makes a basic distinction between “internal” and “external” *loci*. The *internal loci* are “inherent in the very nature of the subject under discussion” (Cicero 2006, *Topica* 8). They include four different classes: (1) those that are drawn from the subject as a whole; (2) those that are drawn from the parts of the subject; (3) those that are drawn from the etymology of the subject; and (4) those that are drawn from things somehow related to the subject. The *external loci* are “brought in from outside” the subject. They pertain to *arguments from external circumstances*, i.e., arguments “that are removed and widely separated from the subject” (Cicero 2006, *Topica* 8; Fig. 2.2).

Most of the examples that Cicero gives of these different types of *loci* are taken from the field of law. The *locus* drawn from the subject as a whole is specified as *definitio* (definition); it is similar to what is nowadays called “argumentation from definition.” Cicero provides the following example: “The civil law is a system of equity established between members of the same state for the purpose of securing to each his property rights; the knowledge of this system of equity is useful; therefore the science of civil law is useful” (Cicero 2006, *Topica* 9). Our reconstruction of Cicero’s example below makes clear how the *locus* of definition may be used in order to construct an argument for defending the standpoint “The science of civil law is useful.”

1. <i>Standpoint</i>	The science of civil law is useful
2. <i>Reason</i>	The knowledge of the system of equity established between members of the same state for the purpose of securing to each his property rights is useful
3. <i>Premise linking (1) and (2)</i>	The civil law is defined as a system of equity established between members of the same state for the purpose of securing to each his property rights

The *locus* drawn from the parts of the subject is specified as *partium enumeratio* (listing the parts). This locus may be used to construct arguments that are based on the division of a whole into its parts. Cicero’s example is as follows: “So-and-so is not a free man unless he has been set free by entry in the census roll, or by touching

with the rod, or by will. None of these conditions has been fulfilled, therefore he is not free” (Cicero 2006, *Topica* 10). In this case, the locus drawn from the parts of the subject is used in order to construct an argument for defending the standpoint that a certain person is not a free man:

1. <i>Standpoint</i>	So-and-so is not a free man
2. <i>Reason</i>	So-and-so has not been set free by entry in the census roll, nor by touching with the rod, nor by will
3. <i>Premise linking (1) and (2)</i>	Only if so-and-so has been set free by entry in the census roll, or by touching with the rod, or by will, will he be a free man

The *locus* drawn from the etymology of the subject is specified as *notatio* (meaning). Cicero provides the following example: “Since the law provides that an *assiduus* (tax-payer or freeholder) shall be *vindex* (representative) for an *assiduus*, it provides that a rich man be representative for a rich man; for that is the meaning of *assiduus*, it being derived, as Aelius says, from *aere dando* (paying money)” (Cicero 2006, *Topica* 10).⁶⁷ The argumentation in this example serves to support the standpoint that a representative for the defendant ought to be a rich man. Since in the days of Cicero the meaning of *assiduus* as “rich man” turned obsolete, the argumentation includes the mentioning of the etymology of the term as put forward by an authority. The example can be reconstructed as follows:

1. <i>Standpoint</i>	A representative for the defendant ought to be a rich man
2. <i>Reasons (2a)</i>	The defendant is a rich man and (2b) the law provides that a representative for a rich man ought to be a rich man
3. <i>Reason supporting (2b)</i>	The law provides that a representative for an <i>assiduus</i> ought to be an <i>assiduus</i>
4. <i>Premise linking (3) and (2b)</i>	The meaning of <i>assiduus</i> is “rich man”
5. <i>Reason supporting (4)</i>	The meaning of <i>assiduus</i> is derived from <i>aere dando</i> (paying money)
6. <i>Reason supporting (5)</i>	Aelius says so

The last type of internal *loci*, those drawn from things somehow related to the subject, is further divided into 15 subtypes.⁶⁸ We will discuss two of these subtypes

⁶⁷ The etymology given by Aelius linking *assiduus* with *aere dando* (more precisely with *qui assem dat*) is mistaken. Nevertheless, one of the meanings of *assiduus* is “resident” (*ad + sedeo*) and therefore “wealthy and subject to taxation.”

⁶⁸ Their names are *ex coniugatis* (from conjugates), *a genere* (from the genus), *a forma generis* (from the form of the genus), *a similitudine* (from similitude), *a differentia* (from difference), *ex contrario* (from the contrary), *ab adiunctis* (from adjuncts), *ab antecedentibus* (from antecedents), *a consequentibus* (from consequences), *a repugnantibus* (from opposites/contradictions/incompatibilities), *ab efficientibus rebus* (from causes/producing things), *ab effectis* (from effects), *ex comparatione maiorum* (from comparison with something bigger), *ex comparatione minorum* (from comparison with something smaller), and *ex comparatione parium* (from comparison with something equal).

in more detail: those two for which Cicero does not only provide the name but also its *law*, i.e., “the principle which provides the inferential strength” (Rubinelli 2009, p. 128).

The first one is the *locus a genere* (argumentation from the genus). Cicero gives the following example: “Since all the silver was bequeathed to the wife, the coin which was left in the house must also have been bequeathed. For the species is never separated from its genus, as long as it keeps its proper name; coin keeps the name of silver; therefore it seems to have been included in the legacy” (Cicero 2006, *Topica* 13). The reconstruction below clarifies the argumentative function of all the elements mentioned in the example including the sentence “the species is never separated from its genus, as long as it keeps its proper name,” which is the law associated with this topic:

1. <i>Standpoint</i>	The coin (<i>nummus/argentum</i>) which was left in the house must have been bequeathed to the wife
2. <i>Reason</i>	All the silver (<i>argentum</i>) was bequeathed to the wife
3. <i>Premise linking</i> (2) and (1)	The coin (<i>nummus/argentum</i>) belongs to all the silver (<i>argentum</i>)
4. <i>Reason supporting</i> (3)	Coin (<i>nummus/argentum</i>) keeps the name of silver (<i>argentum</i>)
5. <i>Premise linking</i> (4) and (3)	The species is never dissociated from the genus as long as it keeps its proper name

The second subtype is the *locus ex comparatione* (argumentation from comparison). For this subtype, Cicero provides three examples, each of which includes a description of the law associated with the *locus* at issue. We discuss the third one, which resembles what in pragma-dialectics is called “similarity argumentation” or “argumentation based on a comparison.” Cicero specifies this particular topic as the *locus ex comparatione parium* (argumentation from the comparison of equals). He gives the following example: “What is valid in one of two equal cases should be valid in the other; for example: Since use and warranty run for two years in the case of a farm, the same should be true of a (city) house” (Cicero 2006, *Topica* 23). Like with the former *locus* we discussed, the law of the present *locus* can be reconstructed as a linking premise, be it that in this case the law operates on a different level in the argumentation:

1. <i>Standpoint</i>	Use and warranty of a city house should run for two years
2. <i>Reason</i>	Use and warranty of a farm run for two years
3. <i>Premise linking</i> (2) and (1)	What is valid in one of two equal cases should be valid in the other

Unlike the internal *loci*, which are divided into four subtypes, the external *loci* are not further divided into subtypes. From Cicero’s description, it follows that they can be used to construct what nowadays would be called “argumentation from authority”: “Extrinsic arguments depend principally on authority [...] Since Publius Scaevola has said that the *ambitus* of a house is only that space which is

covered by a roof put up to protect a party wall, from which roof water flows into the home of the man who has put up the roof, this seems to be the meaning of *ambitus*” (Cicero 2006, *Topica* 24). Since Cicero does not provide a law for the *locus* corresponding to argumentation from authority, the reconstruction of this example only contains the standpoint and the reason given in its defense:

1. <i>Standpoint</i>	The <i>ambitus</i> of a house is only that space which is covered by a roof put up to protect a party wall, from which roof water flows into the home of the man who has put up the roof
2. <i>Reason</i>	Publius Scaevola has said so

As to the application of the internal and external *loci*, Cicero remarks that they are not all equally suitable in all situations. In some cases, particular *loci* are more appropriate than others. In the remaining sections of his *Topica*, Cicero provides an explanation of their application by relating the use of the various *loci* to other aspects of the composition of a speech, such as the type of question the speaker addresses, the type of speech he is giving, the type of standpoint he is defending, and the different parts of the speech.

2.5.2 Boethius’ View of *Loci*

Of the two works Boethius devoted to *loci*, *In Ciceronis Topica* and *De topicis differentiis*, the latter is meant to be his definitive treatment. We therefore concentrate our discussion of his view on *loci* on *De topicis differentiis*. The treatment consists of an introduction with definitions and discussions of key terms (Book I), an exposition of the views on dialectical *loci* of the fourth century orator and philosopher Themistius (Book II), an exposition of Cicero’s view on dialectical *loci* with a comparison and reconciliation of the divisions of the two authors (Book III), and an explanation of rhetorical *loci* followed by a comparison of dialectical and rhetorical *loci* and a discussion of the nature of rhetoric (Book IV).

It is noteworthy that Boethius defines an argument as something that is supposed to change the doxastic attitude of the addressee towards the standpoint: “An argument is a reason (*ratio*) producing belief regarding a matter [that is] in doubt” (Boethius 1978, 1174D). This definition indicates that Boethius’ treatise is intended to be a manual for the production of belief in the context of dialectical disputations and rhetorical speeches rather than a manual for the production of valid arguments in the context of logical proofs or philosophy. Because *loci* are generalizations of reasons on the basis of which the arguer may find the concrete reasons needed for the defense of his standpoint, they play an important role in disputations and speeches. The function of *loci* is reflected in Boethius’ definition of a topic: “A topic is the seat of an argument, or that from which one draws an argument appropriate to the question under consideration” (Boethius 1978, 1174D).

Boethius distinguishes between two types of *loci*: a *locus* of the first type he calls a “maximal proposition” (*maxima propositio*) and a *locus* of the second type a “difference of maximal propositions” (*differentia*). These notions are difficult to interpret. In the following, we provide a separate reconstruction of both of them and clarify their respective functions (if any) in finding and justifying arguments.

By a *locus* of the first type – the maximal proposition – Boethius means a *locus* in the sense of a self-evident truth that may function as a justification of something that is in doubt:

There are some propositions which not only are known per se but also have nothing more fundamental by which they are demonstrated, and these are called maximal and principal [propositions]. And there are others for which the first and maximal propositions provide belief. (Boethius 1978, 1185A)

This definition leaves open two different interpretations. On the one hand, Boethius may have thought of a maximal proposition as a self-evident truth in the sense of a first principle or axiom from which other propositions can be derived. On the other hand, he can have meant a self-evident truth in the sense of a justificatory principle underlying the link between a given reason (premise) and the standpoint (conclusion) this argument is to support.

From the examples of maximal propositions Boethius provides, it becomes clear that the second interpretation is the most appropriate. For instance, when the standpoint “The Moors do not have weapons” is defended by the reason “They lack iron,” he mentions as the maximal proposition “Where the matter is lacking, what is made (*efficitur*) from the matter is also lacking” (Boethius 1978, 1189C-D). The following reconstruction shows that in this example, the maximal proposition functions as a justification of the implicit link between the reason and the standpoint, which can be expressed as “If the Moors lack iron, then they lack weapons:”

1. <i>Standpoint</i>	The Moors do not have weapons
2. <i>Reason</i>	They lack iron
3. <i>Implicit premise linking</i> (2) and (1)	(If the Moors lack iron, then they lack weapons)
4. <i>Maximal proposition supporting</i> (3)	Where the matter is lacking, what is made from the matter is also lacking

Apart from an implicit link, a maximal proposition may also justify an explicit link between a reason and a standpoint. Take the following example, where the standpoint “The art of medicine is advantageous” is defended by the reasons “It is advantageous to drive out disease and minister to health and heal wounds” and “If it is advantageous to drive out disease and minister to health and heal wounds, then the art of medicine is advantageous.” Boethius mentions in this case as the maximal proposition: “What inheres in the individual parts must inhere the whole” (Boethius 1978, 1188D). The following reconstruction shows that the argumentative function of the maximal proposition in this example is the same as that in the preceding

example, namely, to support the conditional premise that validates the passage from its antecedent to its consequent in a *modus ponendo ponens*:

1. <i>Standpoint</i>	The art of medicine is advantageous
2. <i>Reason</i>	It is advantageous to drive out disease and minister to health and heal wounds
3. <i>Explicit premise linking (1) and (2)</i>	If it is advantageous to drive out disease and minister to health and heal wounds, then the art of medicine is advantageous
4. <i>Maximal proposition supporting (3)</i>	What inheres in the individual parts must inhere in the whole

In sum, what Boethius calls a maximal proposition can be reconstructed as some kind of generalization of the implicit or explicit link between the reason and the standpoint. As such, the generalization can be used as a heuristic tool for finding a reason in defense of the standpoint. But it can also, when made explicit, function as a “principle” that does not need any further justification and therefore will eventually produce a state of belief with respect to the standpoint on the side of the other party.

The second type of *locus* Boethius distinguishes is the *difference of maximal propositions (differentia)*. The terminology is confusing, since *loci* of this type are used as labels for species of *loci* of the first type: the maximal propositions. the distinction may find its rationale in the fact that it relates to the two distinct types of use of the *loci*: the “differences” are suitable only for heuristic purposes, i.e., for finding a reason for a given standpoint, whereas the maximal propositions are primarily suitable for justificatory purposes, i.e., for justifying the link between the reason and the standpoint (though they may also be used for heuristic purposes).

Boethius in *De topicis differentiis* distinguishes between intrinsic, extrinsic, and intermediate differences: “All Topics, that is Differentiae of maximal propositions, must be drawn from the terms in the question, namely, the subject and the predicate, or be taken from without, or be situated as intermediates between the [previous] two” (Boethius 1978, 1186D). The *intrinsic differences* are those taken from the subject or predicate of the question, i.e., the standpoint that is doubted. An example is the difference called *from material cause*, of which the maximal proposition we discussed above, “Where the matter is lacking, what is made from the matter is also lacking,” is an instantiation.

A specimen of the *extrinsic differences* not taken from the terms of the standpoint is the difference called *from similar cases*. An instantiation is the maximal proposition “if something inheres in a way similar [to the thing asked about] and is not a property, neither can the thing asked about be a property” (Boethius 1978, 1190D). This maximal proposition functions as the linking premise in the following example: “The way four-leggedness inheres in a horse is similar to the way two-leggedness inheres in a man; but four-leggedness is not a property of the horse; therefore, two-leggedness is not a property of man” (Boethius 1978, 1190C-D). The classification of this difference as “extrinsic” is in fact somewhat unclear, since the maximal propositions that can be derived from it do relate to the terms of the standpoint at issue: the way in which something is predicated of the

subject in the reason is the same as the way in which something is predicated of the subject in the standpoint. The same holds for the other differences in this group. The only difference that can be called “extrinsic” in an emphatic sense is the difference *from judgment*, from which an argument from authority can be derived: in this case, a complete proposition is argued to be true because someone says it is true.

Finally, the *intermediate differences* are those that in one way have to do with the terms of the standpoint at issue and in another way not. An example is the difference that is called *from conjugates*. An instantiation of this is the maximal proposition “if a just [man] is good, justice is also good” (Boethius 1978, 1192C). Topics of this kind are called “intermediate” since they imply a “certain small change” of the terms involved (Boethius 1978, 1192C).

Like the *loci* in the sense of maximal propositions, the *loci* in the sense of differences can be used to find reasons for a given standpoint. The heuristic procedure for this can be described as follows. In order, for example, to defend the standpoint “The Moors do not have weapons,” the arguer might use the intrinsic difference called “from material cause” to find the maximal proposition “Where the matter is lacking, what is made from the matter is also lacking.” This maximal proposition then enables him to construct the reason “The Moors lack iron.” Unlike the *loci* in the sense of maximal propositions, *loci* in the sense of differences are not to be viewed as premises justifying the link between a reason and a standpoint. They are labels that express the genera of maximal propositions and can therefore only function as a heuristic tool for the arguer to come up with a maximal proposition that fits the situation at issue.

2.6 Aristotle’s Syllogistic

In the preceding sections, we saw logical issues – such as the structure of the *reductio ad absurdum*, the definition of deductive argument (*syllogismos*), and the various fallacies of deduction – crop up in a dialectical and argumentative context. The further development of logic, making it into an instrument that can be applied for the analysis and evaluation of arguments, was at first undertaken by Aristotle himself and its most famous result was Aristotle’s theory of syllogistic, to which we shall now turn. The principal exposition of this theory is to be found in his *Prior Analytics*.⁶⁹ For illustrative purposes, we have chosen to treat the small but crucial non-modal part of his theory that is now known as the *theory of the assertoric (and categorical) syllogism* (*AnPr*⁷⁰ I.4–7).⁷¹ A much greater part of the *Prior Analytics*

⁶⁹ An English translation of this work is found in Aristotle (1984, Vol. 1).

⁷⁰ In references “*AnPr*” (*Analytica Priora*) stands for the *Prior Analytics*.

⁷¹ Here *assertoric* stands for the non-modal character of the theory (the lack of qualifications such as “necessarily” and “possibly” as parts of premises and conclusions in its argument forms), and the term *categorical* is used to characterize the theory as a part of what is now known as *predicate logic*, in contrast with *hypothetical* (hypothetical syllogisms forming a part of propositional logic).

has been devoted to modal logic (*AnPr* I.8–22), but the assertoric syllogisms form the kernel and most influential part of Aristotle's logic.⁷² According to Russell, "any person in the present day who wishes to learn logic will be wasting his time if he reads Aristotle or any of his disciples" (1961, Chap. 22, p. 212), but we think that by studying this central part of Aristotle's logic, the reader will have an easy access to a number of logical concepts and get acquainted with the very idea of a logical theory. This holds alike for students of logic and of argumentation theory.⁷³

We met the Greek term *sylogismos* in Sects. 2.3 and 2.4, when we dealt with the *Topics* and *Sophistical refutations*, and we there translated it by "deduction" or "deductive argument." The definition of *sylogismos* used in these two works reappears almost verbatim in the *Prior Analytics* (*AnPr* I.1, 24b18–20), yet in practice the term is used in a much more restricted way, so that in the present context, it will be better to translate it by "syllogism." The restrictions are due to Aristotle's specification of the kinds of statements that may appear as premises or conclusions of syllogisms. His theory applies only to arguments that consist of statements that are, or can be reformulated as, statements of these kinds.

2.6.1 The Language of Syllogistic

In order to give precise expression to his theory of the syllogism, Aristotle in *De interpretatione* (On interpretation)⁷⁴ and in the *Prior Analytics* analyzes and regiments a part of the Greek language so as to be able to unambiguously express all statements that figure in arguments to which the theory is to apply. Even though he did not define a formal language, in the way of contemporary logicians, the standard formulations he introduces for different types of statements serve the same purpose. Thus, Aristotle was a pioneer of formal logic. At the same time, it must be understood that his formalization of arguments was not meant to replace the use of natural language in arguments but to give a clear expression to its interpretation.

⁷² Aristotle's modal syllogistic has been widely regarded as incoherent. For a recent attempt to give a coherent account of it, see Malink (2006, 2013).

⁷³ Our exposition must be very brief. The reader who wants to know more about Aristotelian syllogistic may consult Aristotle's text but also, for instance, Smith (1995), for a short introduction to Aristotle's logic; Kneale and Kneale (1962), for a longer historical exposition; Boger (2004), for a lengthy essay on the assertoric syllogism; and Corcoran (1974), for a modern interpretation which "restores Aristotle's reputation as a logician of consummate imagination and skill" (p. 85). Barnes (1995) contains a section with suggestions for reading (pp. 287–293, esp. p. 291) as well as an extensive bibliography (Barnes et al. 1995) mentioning (under III H) various modern interpretations of syllogistic, starting with that by Łukasiewicz (1957).

⁷⁴ An English translation of this work is found in Aristotle (1984, Vol. 1).

In the *Prior Analytics*, Aristotle introduces the following types of statements:

A proposition,⁷⁵ then, is a statement affirming or denying something of something; and this is either universal or particular or indefinite. By universal I mean a statement that something belongs to all or none of something; by particular that it belongs to some or not to some⁷⁶ or not to all; by indefinite that it does or does not belong, without any mark of being universal or particular, e.g. ‘contraries are subjects of the same science’, or ‘pleasure is not good.’ (Aristotle 1984, Vol. 1, *AnPr* I.1, 24a16–22)

Since each statement must be either *affirmative* (“affirming something”) or *negative* (“denying something”) and each statement must be either *universal* or *particular* or *indefinite*, this gives us six types of statements.⁷⁷ This is not to say that Aristotle was not aware of any other type of statements. For instance, he was clearly aware of *singular statements*, i.e., statements with singular terms, such as “Socrates is white.”⁷⁸ It only means that other types of statements play no role in the theory. Yet, Aristotle was ambitious about the scope of application of the theory, for he seems to argue that, upon analysis, all deductive reasoning and all proof can be reduced to syllogisms in the narrower sense of his theory (Smith 1995, pp. 42–43), so that the restriction to six types of statements would be no real limitation.⁷⁹

Of the six types of statements, the two types (affirmative and negative) of indefinite statements are scantily treated. Mostly, they are said to behave like the corresponding particular statements.⁸⁰ Leaving them out of consideration, we have in Fig. 2.3 just four types of statements left, which are commonly known as *categorical*.⁸¹

Figure 2.3 regiments a part of the English language in a way that parallels Aristotle’s regimentation of a part of the Greek language. Examples of categorical statements are obtained by substituting distinct⁸² *general terms* (countable nouns in

⁷⁵ The Greek word *protasis*, which in a dialectical context is sometimes translated as “premise” and sometimes as “proposition,” must here be translated in the latter way.

⁷⁶ “Not to some” must be read as “to some not,” meaning the same as “not to all.”

⁷⁷ The same six types were introduced in *De Int.* 8. In references “*De Int.*” stands for *De interpretatione*.

⁷⁸ See *De Int.* 7.

⁷⁹ Smith refers to *AnPr* I.23 and *AnPr* I.32–44. See also Kneale and Kneale (1962, p. 44). Of course, there will be some more types of statements in the theory if modality is taken into account. But, in any case, the reduction seems not to have been completed, for Aristotle admits that certain kinds of deduction cannot be reduced to his syllogisms (hypothetical syllogisms and *reductio ad impossibile* arguments, *AnPr* I.44).

⁸⁰ To be on the safe side, when arguing from certain premises to a conclusion, indefinite premises should count as particular and an indefinite conclusion as universal.

⁸¹ The letters A and I were in medieval times chosen to label the two types of affirmative statements: they are the first two vowels of the Latin word *affirmo* (I affirm). Similarly, the letters E and O, which are the vowels of *nego* (I deny), were chosen to label the two types of negative statements.

⁸² Generally, Aristotle avoided self-predication (“Every *S* is an *S*,” etc.); see Corcoran (1974, p. 99).

	Affirmative	Negative
Universal	A-statements Form: Every <i>S</i> is a <i>P</i> Symbolized: <i>SaP</i> Example: Every swan is a predator	E-statements Form: No <i>S</i> is a <i>P</i> Symbolized: <i>SeP</i> Example: No swan is a predator
Particular	I-statements Form: Some <i>S</i> is a <i>P</i> Symbolized: <i>SiP</i> Example: Some swan is a predator	O-statements Form: Some <i>S</i> is not a <i>P</i> Symbolized: <i>SoP</i> Example: Some swan is not a predator

Fig. 2.3 Four types of categorical statements: the square of opposition

the singular or equivalent phrases⁸³) for *P* and *S* in one of the statement forms. The term substituted for *S* is the *subject (term)* and the term substituted for *P* is the *predicate (term)* of the statement that results. Aristotle's regimented statements allow for more variation in the form of expression than we have introduced in the English counterpart, where we have stipulated just one statement form for each type of categorical statement. Also, in the statement forms he uses most often, the order of subject and predicate is *P*–*S* instead of our *S*–*P*, as in “*P* is predicated of (or: belongs to) every *S*.” Consequently, some scholars write “*PaS*,” “*PeS*,” etc., where we have “*SaP*,” “*SeP*,” etc. (e.g., Smith 1995; Boger 2004). Anyhow, no such rendering was Aristotle's.

Aristotle explains that O-statements are the denials of the corresponding A-statements, and vice versa, so that “Every *S* is a *P*” and “Some *S* is not a *P*” form a pair of *contradictories* (of which, necessarily, one is true and the other false). Similarly for I- and E-statements, “Some *S* is a *P*” and “No *S* is a *P*” are *contradictories* (*De Int.* 7, 17b16–20). The relation between A-statements and the corresponding E-statements is a different one. According to Aristotle, they are *contraries*: “Every *S* is a *P*” and “No *S* is a *P*,” he says, cannot both be true (but they could both be false) (*De Int.* 7, 17b20–23). Further it is clear that according to Aristotle, the universal statements are logically stronger than the corresponding particular statements: “Every *S* is a *P*” implies “Some *S* is a *P*,” and “No *S* is a *P*” implies “Some *S* is not a *P*.”⁸⁴

Each of these logical relations between categorical statements seems plausible when taken by itself, but unfortunately the unconditional acceptance of them all has the implausible consequence that for no general term *S*, the set of all *S*'s can be empty. For suppose the set of all *S*'s to be empty, and let *P* be any other general

⁸³ For example, swan, predator, animal, stone, human being, featherless biped, white object, man who knew too much.

⁸⁴ That an A-statement implies the corresponding I-statement follows from the conversion rules for these statements, introduced in *AnPr* I.2 (see below). One may also reason that if “Every *S* is a *P*” is true, its contrary “No *S* is a *P*” must be false, and hence the denial of the latter, “Some *S* is a *P*,” must be true. Analogously to this second way of reasoning, one may show that an E-statement implies the corresponding O-statement.

term, then “Some S is a P ” will obviously be false. Since “Every S is a P ” implies “Some S is a P ,” “Every S is a P ” will also be false. Because “Some S is not a P ” is the denial of “Every S is a P ,” “Some S is not a P ” must then be true and, consequently, the set of all S ’s will not be empty, against our supposition.

This means that if we wish to keep the relations between categorical sentences claimed to hold by Aristotle, we must restrict the language of syllogistic to general terms that apply to at least one individual (*nonempty terms*). This is sometimes called *ablanket assumption of existential import*. It is perfectly possible to go without such an assumption, but then one will get a different logic, not Aristotle’s theory of syllogistic.

Before we turn to reasoning in the language of syllogistic, a further remark must be made about the semantics of the categorical statements. We may assume that with each general term, there is associated a concept as well as a (nonempty) set of objects that fall under the concept. The first is, in contemporary philosophy of language, often denoted as the *intension* (with an “s”) of the term and the other as its *extension*. Both are part of the term’s meaning. Thus, corresponding to the term “swan,” there is the concept of a swan, as its intension, and the set of all swans, as its extension. Though there is no reason to suppose that intensions are unimportant (for Aristotle or for us), it is easier, in order to grasp Aristotle’s logic, to take an *extensional point of view*, that is, to take only the extensions of terms into account. Therefore, we interpret “Every S is a P ” as saying that the set of all S ’s is a subset of the set of all P ’s (there is no S that is not a P) and “No S is a P ” as saying that the set of all S ’s and the set of all P ’s have no element in common. Further we interpret “Some S is a P ” as the denial of “No S is a P ” and hence as saying that the set of all S ’s and the set of all P ’s have at least one common element. Finally, we interpret “Some S is not a P ” as the denial of “Every S is a P ” and hence as saying that there is at least one element in the set of all S ’s that is not an element of the set of all P ’s.⁸⁵

2.6.2 Deductions by Rules of Conversion

Before discussing syllogisms (taking the term in a restrictive sense), Aristotle discusses the *rules of conversion* (*AnPr* I.2). These allow one to derive one categorical sentence from another one while interchanging the two terms. A categorical statement to which such a rule applies is said to be *convertible*. E- and I-statements are convertible: “No B is a C ” is a consequence of “No C is a B ,” whereas “Some B is a C ” is a consequence of “Some C is a B .” A-statements are only *partially convertible*, i.e., “Some B is a C ” is a consequence of “Every C is a B ,” but “Every B is a C ” does not necessarily follow. E-statements are not only convertible but also partially convertible: “Some B is not a C ” is a consequence of “No C is a B .” O-statements, however, are not convertible at all.

⁸⁵ For other interpretations of the language of syllogistic, see Kneale and Kneale (1962, pp. 64–66).

2.6.3 Deductions in the Figures

The core part of Aristotle's theory of arguments in the language of syllogistic is concerned with the question in which cases two categorical premises (satisfying certain conditions) yield, by virtue of their form,⁸⁶ a categorical conclusion (and which conclusion this is). Equivalently, one could say that Aristotle studies arguments in the so-called syllogistic figures. These figures will be explained shortly. At present it suffices to know that an *argument in the figures* is an argument (1) with two premises and a conclusion, each of them in the language of syllogistic, (2) using precisely three distinct general terms such that (3) each pair of statements has one term in common. The question is then, which of the arguments in the figures are, by virtue of their form,⁸⁷ syllogisms?⁸⁸

The term occurring in both premises is called the *middle term*. The other two terms are known as the *extremes*. Each of the extremes occurs both in one of the premises and in the conclusion. One of them is called the *major term* and the premise in which it occurs is called the *major premise*, and the other is called the *minor term* and occurs in what is called the *minor premise*. Aristotle's definitions of "major" and "minor" are somewhat problematic and ad hoc. In the later tradition (sixth century), which we shall here follow, the major term has been defined as the predicate term of the conclusion and the minor term as the subject term of the conclusion.⁸⁹ Here is an example of an argument in the figures that is also *valid*, i.e., a syllogism⁹⁰:

⁸⁶ The form of a pair of categorical premises is determined by establishing which of the four types of categorical statements (A, E, I, O) each premise represents and which cases of repeated occurrence of the same general term can be found in the pair of premises. Aristotle's question is not aiming at conclusions that follow by virtue of the meaning of the general terms.

⁸⁷ Similarly as in the case of pairs of categorical premises, the form of an argument is determined by establishing which of the four types of categorical statements (A, E, I, O) each premise or conclusion represents and which cases of repeated occurrence of the same general term can be found in the argument. Again, the question is not aiming at conclusions that follow by virtue of the meaning of the general terms.

⁸⁸ Or, one could say: which of the arguments in the figures are, by virtue of their form, valid. Here it must be remembered that Aristotle's definition of the syllogism (containing his idea of validity) differs from the modern approach in that according to Aristotle's definition, syllogisms may not be circular or contain superfluous premises. It can be checked that two-premise arguments in the language of syllogistic that are *not* in the figures but are valid (in the modern sense of not admitting a counterexample) by virtue of their form, either have a superfluous premise (e.g., by repeating the other premise in the conclusion) or have inconsistent premises (and are valid merely on that account). The first two are not syllogisms, and, presumably, those that are merely valid on the ground of having inconsistent premises should not be counted as syllogisms either, so that all bona fide two-premise syllogisms must be found among those in the figures.

⁸⁹ See Kneale and Kneale (1962, pp. 68–72).

⁹⁰ Aristotle used to formulate syllogisms not as three separate sentences – as we do here – but as one conditional sentence. For the present example, a "more Aristotelian" formulation would be "If predator belongs to no swan and swan belongs to some birds, then to some birds, predator does not belong (or, predator does not belong to all birds)."

- (1) No swan is a predator.
 (2) Some bird is a swan.
 Therefore: (3) Some bird is not a predator.

Example 1. *A syllogism in the figures*

In the argument of Example 1, (1) and (2) are the premises and (3) is the conclusion; “swan” is the middle term, and “predator” and “bird” are the extremes, “predator” being the major term and “bird” being the minor term; (1) is the major premise and (2) the minor premise. The argument form of our example can be rendered as follows:

- (1) No *S* is a *P*.
 (2) Some *B* is an *S*.
 Therefore: (3) Some *B* is not a *P*.

This form can be symbolized as

- (1) *SeP*
 (2) *BiS*
 Therefore: (3) *BoP*

In such symbolic versions, the lower case letters “a,” “e,” “i,” and “o” indicate in an obvious way the type of categorical statement. An example of an argument in the figures that is not a syllogism is

- (1) Every swan is an animal.
 (2) Every swan is a bird.
 Therefore: (3) Every bird is an animal.

Example 2. *An invalid argument in the figures*

In Example 2, “swan” is again the middle term, and “animal” and “bird” are the extremes; “animal” is the major term and “bird” the minor term. The form of this argument can be rendered as follows:

- (1) Every *S* is an *A*.
 (2) Every *S* is a *B*.
 Therefore: (3) Every *B* is an *A*.

The invalidity of this form of argument can be shown by providing a counterexample (in the sense of an argument displaying this form with true premises and a false conclusion): substituting “swan” for *S*, “bird” for *A*, and “animal” for *B* will give us the true premises “Every swan is a bird” and “Every swan is an animal” but the false conclusion “Every animal is a bird.”

To organize this part of his research, Aristotle distinguishes three figures, according to the role of the middle term in the premises. In each premise the middle term must be either the subject term or the predicate term (it cannot be both). For two premises, this gives three possibilities: either the middle term functions as the subject term in one premise and as the predicate term in the other (first figure), or it functions twice as the predicate term (second figure), or twice as the subject term (third figure). For each figure, Aristotle investigates which combinations of premises yield syllogisms. When treating the first figure, Aristotle at first

Fig. 2.4 The four syllogistic figures

	I	II	III	IV
Major premise	$M - P$	$P - M$	$M - P$	$P - M$
Minor premise	$S - M$	$S - M$	$M - S$	$M - S$
Conclusion	$S - P$	$S - P$	$S - P$	$S - P$

(*AnPr* I.4) restricts himself to arguments in which the predicate term of the conclusion (the major term) is also the predicate term of the premise in which it occurs (the major premise), as is the case in Examples 1 and 2. Thus, he skips syllogisms of forms in which the major term (P) is the subject term of the major premise, whereas the minor term is the predicate of the minor premise, such as:

(1) No P is an M .

(2) Every M is an S .

Therefore: (3) Some S is not a P .

That does not mean that Aristotle is unaware of these syllogisms; with one understandable exception, all kinds of such syllogisms are covered by the *Prior Analytics* (*AnPr* I.7, 29a19–27 and *AnPr* II.1, 53a3–12). The exception is a kind of syllogism in which the conclusion is weaker than the strongest possible conclusion that can be deduced from the premises. Aristotle never deigns to mention such kinds of syllogism. In the later tradition, those first figure argument forms in which the major term is the subject term of the major premise were transposed to a separate fourth figure, giving us the neat system of figures shown in Fig. 2.4:

Example 1 above belongs to the first figure and the invalid Example 2 to the third.⁹¹ The argument form (or mood) of Example 1 is nowadays denoted as “EIO-I,” where the three capital letters indicate the types of categorical statements used (in the order: major premise, minor premise, conclusion) and the Roman numeral indicates the figure (in this case the first figure). This mood is also called by a scholastic name: *Ferio*.⁹²

Each statement occurring in an argument in the figures can belong to any of the four types of categorical statements, giving us $4 \times 4 \times 4 = 64$ moods in each figure, 256 in total. In 24 of these (6 in each figure), the conclusion follows necessarily from the premises, provided, of course, that the blanket assumption of existential import is fulfilled. If existential import is not assumed, this number drops to 15; of these 15 one finds 4 in each of the first three figures and 3 in the fourth figure. As said above, Aristotle does not discuss syllogisms with a weaker conclusion than would be possible. There are five moods that display this feature, but Aristotle recognizes all other moods; so Aristotle recognizes 19 kinds of syllogism in the figures. Since the fourth figure syllogisms are treated rather on the side, the alleged number of Aristotle's kinds of syllogisms in the figures gets often reduced to 14.⁹³

⁹¹ That an argument belongs to a syllogistic figure does not imply that it is a syllogism.

⁹² Notice that the vowels in such a name correspond with the types of categorical statements.

⁹³ Remember that the fourth figure contains one form with a weaker conclusion than would be possible, which we already subtracted.

2.6.4 Proving Validity

For each syllogism of the second or third figure (and also for cases that later came to belong to the fourth figure), Aristotle provides a proof (at a metalevel⁹⁴) showing why its conclusion necessarily follows from the premises. For first figure syllogisms (exempting those that came to belong to the fourth figure), no such proof is needed: first figure syllogisms are called *perfect*, meaning that they “need nothing other than what has been stated to make the necessity evident” (Aristotle 1984, Vol. 1, *AnPr* I.1, 24b22–24). As an example of a proof, we quote Aristotle’s proof for syllogisms in the mood EIO-II, also called *Festino*:

(1) No *N* is an *M*.

(2) Some *O* is an *M*.

Therefore: (3) Some *O* is not an *N*.

Aristotle writes:

... if *M* belongs to no *N*, but to some *O*, it is necessary that *N* does not belong to some *O*. For since the negative is convertible, *N* will belong to no *M*; but *M* was admitted to belong to some *O*: therefore *N* will not belong to some *O*; for a deduction is found by means of the first figure. (Aristotle 1984, Vol. 1, *AnPr* I.5, 27a32–36)

Using our formats for categorical statements, we may write this proof as follows:

(1) No *N* is an *M* (premise).

(2) Some *O* is an *M* (premise).

(3) No *M* is an *N* (from (1) by conversion of E-statements).

(4) Some *O* is an *M* ((2) repeated).⁹⁵

(5) Some *O* is not an *N* (from (3) and (4) by the perfect mood EIO-I (*Ferio*)).

The proof is one based on the rules of conversion and the perfect (first figure) syllogisms by simply chaining these procedures (this is called a *direct proof*⁹⁶). But not all syllogisms can be proved in this way: sometimes an *indirect proof*, i.e., one by *reductio ad impossibile*, must be given. In these proofs, the denial of the conclusion is supposed to hold, together with the premises; then, by chaining perfect syllogisms and applications of conversion rules, one derives a pair of contradictories. This shows that not all assumptions can be true and hence that if the original premises are true, the denial of the original conclusion must be false and consequently the conclusion itself must be true. To illustrate this procedure, we quote an example that applies the perfect mood AAA-I, also called *Barbara*, to

⁹⁴ At a metalevel, since Aristotle’s proofs show that some argument form is a syllogism. But if general terms are substituted for variables, the proofs can also be read, at the level of the language of syllogistic, as showing the truth of their conclusions in that language.

⁹⁵ Repetition is used to make the application of *Ferio* at the next line more perspicuous.

⁹⁶ Aristotle’s term for *direct* in this context is *deiktikos* (ostensive, probative).

obtain a proof for syllogisms of the mood AOO-II, also called *Baroco*. *Barbara* and *Baroco* can be rendered as follows:

(1) Every *M* is a *P*.

(2) Every *S* is an *M*.

Therefore: (3) Every *S* is a *P* (AAA-I, *Barbara*).

(1) Every *N* is an *M*.

(2) Some *O* is not an *M*.

Therefore: (3) Some *O* is not an *N* (AOO-II, *Baroco*).

Aristotle writes:

Again if *M* belongs to every *N*, but not to some *O*, it is necessary that *N* does not belong to some *O*; for if *N* belongs to every *O*, and *M* is predicated also of every *N*, *M* must belong to every *O*; but we assumed that *M* does not belong to some *O*. (Aristotle 1984, Vol. 1, *AnPr* I.5, 27a36–b1)

In our format:

(1) Every *N* is an *M* (premise).

(2) Some *O* is not an *M* (premise).

(3) Suppose: Every *O* is an *N* (denial of the conclusion to be reached).

(4) (while supposing (3)) Every *N* is an *M* ((1) repeated).

(5) (while supposing (3)) Every *O* is an *N* ((3) repeated).

(6) (while supposing (3)) Every *O* is an *M* (from (4) and (5) by *Barbara*).

(7) (while supposing (3)) Some *O* is not an *M* ((2) repeated).

Here Aristotle's proof stops, leaving the rest to the reader: since (6) and (7) form a pair of contradictories, supposition (3) must be false (assuming that (1) and (2) are true) and its denial "Some *O* is not an *N*" must be true.

2.6.5 Aristotle's Method of Contrasted Instances

In logic, showing that certain forms of argument are invalid is as important as showing that forms are valid. Above, when proving the invalidity of the argument form of Example 2, we saw how this can be done by means of a counterexample. Aristotle selected counterexamples in a very efficient way, called the "method of contrasting instances."⁹⁷

To show, for example, that in the first figure from a pair of premises of the form "Every *M* is a *P*. No *S* is *M*" no conclusion *S*–*P* (*P* being the major term and *S* the minor) follows, instead of working through four counterexamples (one for each categorical statement form), it suffices to present two contrasted instances, that is, two ways of substituting terms for *P*, *M*, and *S*, both of which yield true premises, but such that one of them makes "Every *S* is a *P*" true, whereas the other makes "No *S* is a *P*" true. The first one provides counterexamples that exclude the two negative

⁹⁷ See Kneale and Kneale (1962, pp. 75–76).

conclusions, and the second one does the same for the two affirmative ones.⁹⁸ In Aristotle's words (the order of terms is P, M, S),

... if the first term belongs to all the middle, but the middle to none of the last term, there will be no deduction in respect of the extremes; for nothing necessary follows from the terms being so related; for it is possible that the first should belong either to all or to none of the last, so that neither a particular nor a universal conclusion is necessary. But if there is no necessary consequence, there cannot be a deduction by means of these propositions. As an example of a universal affirmative relation between the extremes we may take the terms animal, man, horse; of a universal negative relation, the terms animal, man, stone. (Aristotle 1984, Vol. 1, *AnPr* I.4, 26a2–9)

The first assignment of terms is P : animal, M : man, S : horse. This gives us the true premises: "Every man is an animal" and "No horse is a man" but also "Every horse is an animal" is true, so that both "No horse is an animal" and "Some horse is not an animal" are false, giving us the counterexamples needed to show that no negative conclusion $S-P$ follows.

The second assignment of terms is P : animal, M : man, S : stone. This gives us again true premises: "Every man is an animal" and "No stone is a man," but also "No stone is an animal" is true, so that both "Every stone is an animal" and "Some stone is an animal" are false, giving us the counterexamples needed to show that no affirmative conclusion $S-P$ follows.

2.6.6 The Completeness of Syllogistic

Aristotle *reduces* all syllogisms in the second and third figures to those in the first figure, that is, he shows them to be syllogisms by a direct or indirect proof using only first figure syllogisms and the conversion rules. A further reduction, in which of the first figure syllogisms only those of the moods AAA-I (*Barbara*) and EAE-I (*Celarent*) were used, was also effected by Aristotle. This does not answer the question whether *Barbara* and *Celarent* and the conversion rules suffice to give direct or indirect proofs for each syllogism in the language of syllogistic *no matter the number of premises*. Aristotle claims at least so much, when he announces an even more encompassing reduction:

It is clear from what has been said that the deductions in these figures are made perfect by means of the universal deductions in the first figure [*Barbara* and *Celarent*] and are reduced to them. That every deduction without qualification can be so treated, will be clear

⁹⁸ The method does not work to exclude a conclusion of the form "Some P is not an S " in which P is the minor term. "Some P is not an S " actually follows from the pair of premises here given as an example. However, the method works to exclude the other three conclusions of the form $P-S$, in which P is the minor. So the method may be used to reject seven invalid forms using only two assignments of terms to variables.

presently, when it has been proved that every deduction is formed through one or other of these figures. (Aristotle 1984, Vol. 1, *AnPr* I.23, 40b17–22)

The attempt at a proof in *AnPr* I.23 is, however, incomplete and in other respects wanting (Corcoran 1974, pp. 120–122). Nevertheless, it has been proven that the question can be answered in the affirmative (Corcoran 1972). This means that as a system for formal (direct and indirect) deduction within the language of syllogistic, the system consisting of *Barbara*, *Celarent*, a rule for repetition, and conversion rules – for I-conversion, E-conversion, and partial A-conversion – is indeed complete.

2.7 Stoic Logic

Stoic philosophy is mainly known for its ideas about ethics and the conduct of one's life, but these ideas were from the beginning supported by the study of logic (including philosophy of language and epistemology) and physics (natural science). In logic, the Stoics continued the tradition of the Megarian school (founded ca. 400 BC by Euclides of Megara), which stood in opposition to Aristotle and the school of Aristotle's successors: the Peripatetic school. This antagonism was inherited by the Stoic school founded in Athens circa 300 BC by Zeno of Citium, who had been educated in the Megarian tradition by Diodorus Cronus and Stilpo. Thus, for the logical approach to arguments, the Megarians and the Stoics, in particular the Old Stoic school (ca. 300–ca. 130 BC), provide us with a second classical background, besides, and apart from, the Aristotelian one.

However, the outlines of this second background are much harder to discern: in contrast to the Aristotelian corpus, no Megarian or Stoic works on logic have come down to us. That is not to say that no such works were written. Diogenes Laertius mentions in his *Lives and opinions of eminent philosophers*⁹⁹ that Chrysippus (circa 280–206 BC), the third head of the Stoic school, wrote 705 books, 311 of them about logic (O'Toole and Jennings 2004, p. 413). Even if one takes into account that it takes usually several ancient “books” to make a work that would nowadays be published as one volume, this is a considerable amount. Unfortunately, we have none of these books (whether on logic or not). We even do not have any of the numerous books called *Introduction to Logic* (*Eisagôgê dialektikê*) that Stoic authors were wont to write as much as contemporary logic professors. We must do with descriptions, explanations, summaries of points of view, and some quotations by other ancient authors – writing centuries later – who were not always knowledgeable about logic and often opposed to, or even prejudiced against, the Stoics.

Our main sources are the works of the skeptic physician Sextus Empiricus (circa AD 200) – who wrote *Outlines of Pyrrhonism*¹⁰⁰ and *Against the*

⁹⁹ See Sect. 2.2, Note 1.

*mathematicians*¹⁰¹ – and the abovementioned popular work by Diogenes Laertius. They are supplemented by important information from a number of other authors, such as Alexander of Aphrodisias, Pseudo-Apuleius, Aulus Gellius, Boethius, Cicero, Galen, Origen, and Philoponus.

Sextus Empiricus is a serious author, but as a skeptic he is ill-disposed towards Stoicism. Diogenes Laertius is notoriously untrustworthy, but less so in the case of Stoic logic, since he could avail himself of the writings of Diocles Magnes (i.e., Diocles of Magnesia, first century BC), “who seems to have had a fair knowledge of Stoic logic” (Mates 1961, p. 9). Since, generally, these sources are insufficient to assign particular views to particular Stoic philosophers, we must assign the views we reconstruct from this material indiscriminately to the early Stoic philosophers (of whom Chrysippus was the most important one), running the risk that we so obtain a set of views that was held by nobody in its entirety (Mates 1961, p. 8). Yet, from these sources, scarce as they may be, the picture arises of a highly original and sophisticated approach to logic that could be appreciated only after the development of logic starting with Boole and Frege had made it possible for Łukasiewicz in 1935 to attempt a new reading of the old texts (Łukasiewicz 1967).

In this section, we can only briefly sketch the Stoics’ philosophy of language, which underlies their logic, the logical operators that they introduced, and their formal system of syllogistic.¹⁰² It then will become clear that it is really to be regretted that the Peripatetics and the Stoics were so little disposed to cooperate, for their approaches are apparently complimentary. To put it briefly, the Peripatetics had developed a kind of predicate logic (Aristotle’s syllogistic) and the Stoics a kind of propositional logic. To be fair, it must be said that the Peripatetics, too, worked on a kind of propositional logic: there are some remarks of Aristotle pointing in that direction, and we know that his pupil and collaborator Theophrastus developed a theory of “hypothetical syllogisms” (Kneale and Kneale 1962, pp. 96–100, 105ff). Unfortunately, instead of joining their efforts to the profit of both of them, the two schools stayed apart, each developing its own logical terminology. When in late antiquity their terminologies merged, the creative period for logic was over and the merging of terminologies was confusing rather than profitable.

¹⁰⁰ Greek title: *Purrhôneioi Hupotupôseis*, abbreviated as “PH” (Sextus Empiricus 1933–1949).

¹⁰¹ For this collection of writings (Sextus Empiricus 1933–1949, II–IV), various Greek and English titles are used, either for the whole or for a part: *Against the mathematicians* (Greek: *Pros mathêmatikous*), *Against the professors*, *Against the dogmatists*, *Against the logicians*, etc., but most often the Latin title is used: *Adversus mathematicos*, abbreviated as “AM.” The Books AM VII and VIII are Books I and II, respectively, of *Against the logicians* (Sextus Empiricus 1933–1949, II).

¹⁰² This section draws mainly on the monograph by Mates (1961), the briefer exposition by Kneale and Kneale (1962), the longer and more recent one by O’Toole and Jennings (2004), and – especially for the interpretation of the formal system – on Bobzien (1996) and Hitchcock (2002d, 2005b).

2.7.1 Signs and Their Signification

The Stoics divided philosophy into logic (*dialektikē*), physics, and ethics. Of these fields, ethics, in which it is investigated how one can lead a virtuous, harmonious, and happy life, was their main concern. But the achievement of a good life required insight into the natural course of events (physics) and of the ways in which such knowledge can be obtained (logic, in a broad sense: including philosophy of language and epistemology).

The Stoics were materialists: not only the objects of the external world but also each person's mental presentations (*phantasiai*) were thought of as corporeal entities. Some of our presentations are rational (*phantasiai logikai*), which means that their content can be expressed in words. These words are again corporeal: as sounds or written characters, they are part of the physical world; however, the content or meaning expressed by these words was considered to be incorporeal and therefore not said to *exist* (*huparchein*) as corporeal entities exist but to *subsist* (*huphistasthai/paruphistasthai*).¹⁰³ The ontological distinction is similar to the one drawn by Alexius Meinong between *existieren* (exist) and *bestehen* (subsist) (O'Toole and Jennings 2004, p. 463).

With respect to horses, for instance, the following four kinds of entities may be distinguished:

1. Actual horses in the external world
2. Rational presentations of horses in the minds of individuals
3. Occurrences of the word "horse" (voiced or written)
4. The content of 2 or the meaning of 3

Of these, the first three would be corporeal and exist, whereas the last one would be incorporeal and merely subsist. The Stoic technical term for entities of the last kind was *lekton* (plural: *lekta*), a term that can be literally rendered as "what has been said," or "what can be said," or more freely translated as "what is meant." "It is what the Barbarians do not understand when they hear Greek words spoken," though nothing prevents them from hearing the spoken sounds.¹⁰⁴ Hearing the word *hippos*, they will be unable to attach a meaning to it and consequently fail to form a rational presentation of a horse, though they may be perfectly familiar with actual horses.

The *lekta* divide into two kinds: the complete *lekta*, which are contents expressed by sentences, and the deficient *lekta*, which are contents expressed by parts of sentences, especially grammatical predicates.¹⁰⁵ Complete *lekta* are again divided into various kinds, corresponding to different kinds of sentences, of which they are the incorporeal contents, and to different kinds of speech act: propositions

¹⁰³ Other subsisting incorporeal entities were void, place, and time, whereas fictional entities may have belonged to yet another order of being (O'Toole and Jennings 2004, p. 461).

¹⁰⁴ Mates (1961, p. 11), paraphrasing Sextus Empiricus, *AM* VIII.12.

¹⁰⁵ We cannot here enter into the debate about whether the grammatical subject also expresses an incomplete *lekton* (see O'Toole and Jennings 2004, pp. 450–456).

(*axiômata*), questions, injunctions, prayers, curses, oaths, etc. (O'Toole and Jennings 2004, p. 443). Just as an interrogative sentence expresses a question and can be used to ask a question, a declarative sentence expresses a proposition and can be used to make a statement. The Stoics defined what they called an *axiôma* (which we here render by *proposition*) as “a complete *lekton*, assertoric by itself.”¹⁰⁶ Their conception has – like all conceptions of propositions – its peculiarities. First, the name should not confuse us: an *axiôma* is not the same as what we would call an axiom (though axioms are propositions), for a proposition does not need to be true, let alone function as a starting point of a system of deductions. The point is that it is the kind of *lekton* that can sensibly, and in a primary sense, be evaluated as true or as false.¹⁰⁷ By contrast, it makes no sense to say of questions, injunctions, etc., that they are true or that they are false. Propositions are expressed by declarative sentences (rather than by interrogative sentences or imperative sentences, etc.). Being *lekta* they are incorporeal.

Thus far the characteristics of the Stoic proposition seem rather similar to those of contemporary notions of proposition, such as Frege's notion of thought (*Gedanke*), but there are also remarkable differences. One thing is that Stoic propositions are tensed, whereas we would rather think of tense as a property of sentences. From a Fregean perspective, one would say that “Tomorrow will be John's birthday” expresses the same proposition today as “Today is John's birthday” will express tomorrow and “Yesterday was John's birthday” will express the day after tomorrow. But these three sentences would express different Stoic propositions, because tense is a property of these propositions as well as of the sentences by which they are expressed. A consequence of their being tensed is that propositions can also change their truth-values: each of the three propositions expressed above is true only on one day of the year.

Even more striking is that Stoic propositions may sometimes be destroyed. For example, “This man is dead” – where “this man” refers to a particular person named “Dion” – expresses a Stoic proposition, which however ceases to subsist when Dion dies and “this man” can no longer refer to him. Therefore, the proposition that this man is dead can never be true (for to have a truth-value a proposition must subsist). It is, however, admitted that the proposition that Dion is dead can be true. This latter proposition must therefore count as a different Stoic proposition (Kneale and Kneale 1962, pp. 154–155).

These features move the Stoic propositions very far from the unworldly propositions that inhabit a Fregean or Popperian third realm of being, with which they are often compared. Scholars differ about this comparison. Kneale and Kneale (1962, p. 156) argue that both kinds of propositions are similar also in that they

¹⁰⁶ Aulus Gellius, *Noctes Atticae* XVI.8, translation by Mates (1961, pp. 27–28). The definition can also be found in Sextus Empiricus, *PH* II.104, and in Diogenes Laertius, *LP* VII.65.

¹⁰⁷ The word *axiôma* is clearly derived from the verb *axiousthai*, in the sense of “to be asserted/claimed” (O'Toole and Jennings 2004, p. 443) or perhaps in the sense of “to be evaluated” (as true or false).

“exist in some sense whether we think of them or not.” But Nuchelmans (1973, pp. 85–87) argues against this. This may not be the place to pronounce on such discussions, but despite these difficulties, it may be clear that the Stoic conception of proposition provides an important background for the notion of “propositional content” figuring in contemporary argumentation theory.

2.7.2 Simple and Complex Propositions

The Stoics divided the propositions into complex and simple ones, according to whether or not a proposition was constructed from propositions (or from one proposition taken several times) by means of a connective (*sundesmos*) (Sextus Empiricus, *AM* VIII.93–95). Evidently, they spoke of the construction of propositions in much the same way as one would speak of the constructions of the declarative sentences by which they are expressed.

Understandably, since a negation does not connect propositions, they did not include negation among the connectives, and therefore negations of simple propositions were again simple propositions. A proposition was supposed to be equivalent to its own double negation (Diogenes Laertius, *LP* VII.69). Presumably, then, negating turned true propositions into false ones and vice versa. Those simple propositions that were not negations could still be negative in other ways: their subject could be (equivalent to) “no one” or “nothing,” or their predicate could be privative (like “unkind”).¹⁰⁸ Another way of classifying simple propositions is by the nature of their subject: besides being negative (“no one” or “nothing”), the subject could be (1) a demonstrative phrase in the nominative case (“This man is walking”), where the speaker points at a particular person, or (2) indefinite (“Someone is walking”), or (3) a noun in the nominative case (“Dion is walking”). A simple proposition of the first type is true if and only if the predicate belongs to the object indicated by the demonstrative phrase. A proposition of the second type is true if and only if some corresponding proposition with a demonstrative subject is true.¹⁰⁹

Kneale and Kneale (1962, p. 146) remark that there is no simple Stoic proposition that concurs with Aristotle’s universal affirmative statement (“Every human is a rational mortal animal”) and present evidence that the Stoics may have analyzed the universal affirmative as a generalized conditional (“If anything is a man, it is a rational mortal animal”). In that case universal affirmative sentences would express complex propositions.

¹⁰⁸ These ways of being negative can all be combined: “It is not the case that no one is unkind.”

¹⁰⁹ See Kneale and Kneale (1962, pp. 145–147), O’Toole and Jennings (2004, pp. 465–466), Sextus Empiricus, *AM* VIII.96–100, and Diogenes Laertius, *LP* VII.69–70. A proposition of the third kind is certainly true if a corresponding proposition of the first kind is true, but that cannot be the whole story, since “Dion is dead” can be true while it is impossible to refer to Dion by a demonstrative (Kneale and Kneale 1962, pp. 126–127, 154–155).

Complex propositions were distinguished according to their principal connective.¹¹⁰ Diogenes Laertius lists seven kinds (*LP* VII.71–73). The most important of them are:

1. Conditionals, for instance: “If it is day then it is light.”
2. Conjunctions, for instance: “Both it is day and it is light.”
3. Disjunctions, for instance: “Either it is day or it is night.”¹¹¹

Conjunctions and disjunctions are not necessarily restricted to two components but may in fact have any number of components connected by repeated occurrences of “and” or “or” respectively, for instance “It is light, and it is day, and Dion runs, and Socrates walks, and....”

The semantics of conditionals was much debated among the Megarians and the Stoics. Among the proposals discussed, that of Zeno’s contemporary Philo of Megara amounts to the truth conditions of what is now known as *material implication*: a conditional proposition “If A then B ” is true if and only if it is not the case that A is true and B false. Diodorus Cronus (one of Zeno’s teachers), on the other hand, held a conditional “If A then B ” to be true if and only if at no time A would be true, whereas B would be false. This presupposes that propositions can have truth-values related to times, so that we can write the Diodorean conditional as “For all times t , if A at t , then B at t .”

The most common view among the Stoics (often ascribed to Chrysippus), however, seems to have been that in a true conditional, there must be some more intimate connection between the antecedent (A) and the consequent (B), so that in circumstances in which the antecedent were true, the consequent also had to be true (O’Toole and Jennings 2004, pp. 484–489). Thus, a conditional “If A then B ” was said to be true if and only if the contradictory of B (cB) was “in conflict” with A . The notion of *conflict* involved here implies that A and cB cannot both be true, but that is not to say that A and cB must be logically inconsistent: it may be that A and cB cannot both be true for physical reasons. Further, to count as conflicting, A and cB must be distinct, and it must be excluded that they cannot both be true merely because one of them is necessarily false (Hitchcock 2002d, pp. 10–11).¹¹² In this section, we shall from now on suppose that Stoic conditionals are interpreted in this way.

The Stoic semantics for conjunctions is in agreement with contemporary classical logic: a conjunction is true if and only if each of its conjuncts (the propositions that are connected to construct the conjunction) is true. Together with negation,

¹¹⁰ The principal connective is the (occurrence of a) connective that governs the entire proposition, not just a part of it.

¹¹¹ Examples of the other kinds are the following: “Since it is day, it is light” (inferential), “Because it is day, it is light” (causal), “It is rather day than night” (indicating greater degree), and “It is not so much night as day” (indicating lesser degree). See Kneale and Kneale (1962, pp. 147–148).

¹¹² No proposition conflicts with itself, not even a proposition that is logically false. Consequently, for each proposition A , the conditional “If A , cA ” will be false (since $ccA = A$). Clearly the Stoic logic of conditionals is not classical: rather it is a *connexive* logic (Wansing 2010).

conjunction yields the full power of expression of contemporary classical propositional logic, which is not to say that the Stoics were in possession of that logic.

About the Stoic semantics for disjunction, the sources differ, but it seems likely that a disjunction was thought to be true if and only if it consisted of a sequence (without repetitions) of connected propositions (its disjuncts), such that distinct disjuncts were in conflict, whereas one of the disjuncts was true (Hitchcock 2002d, pp. 12–14).¹¹³

2.7.3 Arguments

According to the Stoics, an argument (*logos*) is a system composed of premises and a conclusion (Diogenes Laertius, *LP* VII.45). Obviously, premises and conclusion must be propositions. Yet arguments are not complex propositions, since the propositions out of which they are composed are not connected by connectives. It is not excluded that the conclusion is identical to a premise, but it is generally excluded that there is only one premise (or none).¹¹⁴

An argument is valid (*sunaktikos*, *perantikos*) if and only if the contradictory of its conclusion conflicts with the conjunction of its premises (Diogenes Laertius, *LP* VII.77). Given the most common Stoic semantics for conditional propositions, this led the Stoics to the following *principle of conditionalization*: an argument will be valid precisely when the conditional proposition whose antecedent is a conjunction composed of all the argument's premises and whose consequent is equal to the argument's conclusion (the so-called associated conditional) will be true (Sextus Empiricus, *PH* II.137).¹¹⁵

An argument is said to be *true* (*alêthês*) if and only if it is valid and all its premises are true (as well as its conclusion). An argument is *demonstrative* (*apodeiktikos*) if and only if it is valid, and true, and leads from pre-evident premises to a non-evident conclusion. Finally, an argument is a *proof* (*apodeixis*) if it is valid, true, and demonstrative and moreover conducts us to the discovery of its conclusion (and, for instance, not merely to an acceptance of the conclusion on the basis of an argument from authority) (Sextus Empiricus, *PH* II.138–143).

¹¹³ We agree with Hitchcock (2002d, p. 14), who assumes “that a disjunction is true if and only if one disjunct is true and each disjunct conflicts with each other disjunct” (the “quasi-connexive” account). Syntactically, a disjunct may be repeated in the sequence, but then, of course, the disjunction is false (since no proposition conflicts with itself).

¹¹⁴ However, Antipater of Tarsus, who was head of the Stoic school around 150 BC, “asserted that arguments with a single premiss can be constructed” (Sextus Empiricus, 1933–1949, II, *Against the logicians* II(= *AM* VIII).443).

¹¹⁵ The principle of conditionalization expressed in this passage of Sextus Empiricus is rendered as follows by Mates: “Some arguments are valid and some are not valid: valid, whenever the conditional whose antecedent is the conjunction of the premises and whose consequent is the conclusion, is true” (1961, p. 110).

2.7.4 The Stoic Formal System

Some of the valid arguments were called *sylogistic*. These were the so-called *undemonstrated arguments* (*anapodeiktoi*)¹¹⁶ and those arguments that were reduced to the undemonstrated arguments (Diogenes Laertius, *LP* VII.78). The terms *undemonstrated* and *reduced* refer to the formal system the Stoics developed to show that arguments of certain kinds were valid. Evidently, the system was not intended to capture all valid arguments. For one thing, it was restricted to propositional logic (negations, conditionals, conjunctions, and disjunctions), but even within that realm, the system seems to have been incomplete. It is hard to tell whether it was really incomplete, for only part of the system has come down to us.¹¹⁷

Reductions in the Stoic formal system started from a given argument that had to be shown to be a syllogism. By application of a reduction rule, called a *thema*,¹¹⁸ this argument was replaced by (one or two) other arguments. Arguments introduced by a reduction rule had either to belong to the one of the five types (listed below) of undemonstrated arguments, which needed no further reduction, or to be further reduced by a reduction rule. The reduction was completed as soon as all arguments that had turned up, but were not further reduced, belonged to the undemonstrated arguments. In that case the argument from which the reduction had started had been shown to be a syllogism. The undemonstrated arguments were obviously valid, and the *themata* took care of the validity of the other arguments in the reduction.

A completed reduction can also be read as a deduction, with the undemonstrated arguments as axioms, the reversals of the reduction rules as deduction rules, and the given argument as its conclusion. But notice that it would be a meta-deduction, consisting not of propositions but of arguments.¹¹⁹

The five types of undemonstrated arguments have come down to us as short descriptions. More than one argument form may be covered by a description, and the descriptions may admit more arguments than the argument forms here

¹¹⁶ Singular: *anapodeiktos*. The word is used here in a way unrelated to the term *demonstrative* (*apodeiktikos*) above. It can be translated as “undemonstrated” or as “indemonstrable.” We follow Mates (1961) and Hitchcock (2002d, 2005b) in translating it in the first way. As we shall see, some *anapodeiktoi* can be demonstrated in the Stoic formal system, e.g., those of the second type can be reduced to those of the first type, and vice versa. So we take *anapodeiktos* to mean: undemonstrated because not in need of demonstration (see Diogenes Laertius, *LP* VII.79).

¹¹⁷ Moreover, there is uncertainty about the interpretation of “conflict” and hence about the scope of “validity.” Can an argument with a superfluous premise be valid? Probably not, since Sextus Empiricus denies it (*AM* VIII.429, 431), but this is not immediately obvious from the definition of validity in terms of conflict stated above (Diogenes Laertius, *LP* VII.77).

¹¹⁸ Plural: *themata*.

¹¹⁹ In this respect, the Stoic formal system resembles a sequent calculus or a tableaux system in contemporary logic.

shown.¹²⁰ We shall here present the descriptions of the types and for each type just one of the argument forms covered by the description. In the argument forms, the Stoics used ordinals as propositional variables, where we use capitals. Premises will be separated from the conclusion by a slash. The descriptions within quotation marks we took from Bobzien (1996, p. 136), substituting “undemonstrated argument” for “indemonstrable” and introducing some minor changes:

- (1) “A first undemonstrated argument is an argument that is composed of a conditional and its antecedent (as its premises), having the consequent of the conditional as conclusion.” (Sextus Empiricus, *AM* VIII.224, Diogenes Laertius, *LP* VII.80)
Argument scheme: If *A* then *B*, *A/B*.

In the later tradition, this mode of reasoning became known as *modus ponendo ponens* (the mood that affirms (*B*) by affirming (*A*)) or simply as *modus ponens*.

- (2) “A second undemonstrated argument is an argument that is composed of a conditional and the contradictory of its consequent as premises, having the contradictory of its antecedent as conclusion.” (Sextus Empiricus, *AM* VIII.225, Diogenes Laertius, *LP* VII.80)
Argument scheme: If *A* then *B*, Not-*B*/Not-*A*.

In the later tradition, this mode of reasoning became known as *modus tollendo tollens* (the mood that denies (*A*) by denying (*B*)) or simply as *modus tollens*.

It will be no surprise that the Stoics, who explicitly recognized arguments following the patterns of *modus ponens* and *modus tollens* as valid, were also aware of the fallaciousness of arguments following the patterns of denying the antecedent (Sextus Empiricus, *AM* VIII.432–433, Diogenes Laertius, *LP* VII.78) and affirming the consequent (Sextus Empiricus, *PH* II.147–149). Such arguments were said to be invalid because of their being put forward in a bad form.

- (3) “A third undemonstrated argument is an argument that is composed of a negated conjunction and one of its conjuncts (as premises), having the contradictory of the remaining conjunct as conclusion.” (Sextus Empiricus, *AM* VIII.226, Diogenes Laertius, *LP* VII.80)
Argument scheme: Not both *A* and *B*, *A*/Not-*B*.

In the later tradition, this mode of reasoning, as well as the one that follows, was at times referred to as *modus ponendo tollens* (the mood that denies (*B*) by affirming (*A*)).

- (4) “A fourth undemonstrated argument is an argument that is composed of a disjunction and one of its disjuncts (as premises), having the contradictory of the remaining disjunct as conclusion.” (Diogenes Laertius, *LP* VII.81)
Argument scheme: Either *A* or *B*, *A*/Not-*B*.

¹²⁰ For instance, the second type of undemonstrated arguments includes also the instances of the form “If not-*A* then not-*B*, *B/A*,” etc. Also, conjuncts must be treated as equals, so that the third type includes also the instances of the form “Both *A* and *B*, *B*/Not-*A*,” similarly for disjuncts. Moreover, on the basis of other texts, the descriptions may be expanded to cover conjunctions and disjunctions with respectively more than two conjuncts or more than two disjuncts (Hitchcock 2002d, pp. 24–28).

In the later tradition, this mode of reasoning, as well as the preceding one, was at times referred to as *modus ponendo tollens* (the mood that denies (B) by affirming (A)).

- (5) “A fifth undemonstrated argument is an argument that is composed of a disjunction and the contradictory one of its disjuncts (as premises), having the remaining disjunct as conclusion.” (Diogenes Laertius, *LP* VII.81)
Argument scheme: Either A or B, Not-A/B.

In the later tradition, this mode of reasoning was at times referred to as *modus tollendo ponens* (the mood that affirms (B) by denying (A)).

Thus, we have a pretty good survey of what the undemonstrated arguments were. As to the *themata* (the rules that were used to reduce arguments to other arguments and ultimately to the undemonstrated argument), we are not so fortunate. Presumably, there were four *themata*, but we have only versions of the first and the third *thema* (the latter in two quite different versions). We also know that the second and fourth *thema* were similar to the third one.¹²¹ Further, there are some arguments that we know to have been syllogisms and many that we may presume not to have been syllogisms. This situation invites attempts at reconstructing the Stoic system from its remains. Hitchcock (2002d, p. 3) lists ten earlier reconstructions, among them one by himself, before proposing a new one. We shall not try to add to this list, but just close off our survey of the Stoic system by describing versions of the first and of the third *thema* and then present two examples of reductions in which only these *themata* are used.

The first *thema* allows one to reduce a given argument with a premise *P* and a conclusion *C* to another argument, with as conclusion the contradictory of *P* (*cP*) and with the same premises, except that *P* has to be replaced by the contradictory of *C* (*cC*):

Thema 1: Argument *X*, *P/C* reduces to argument *X*, *cC/cP*.

Here “*X*” stands for the other premises.

The version of the third *thema* that we shall use in the examples allows one to reduce a given argument to two other arguments in the following way:

Thema 3: Argument *X*, *P/C* reduces to arguments *X/Q* and *Q*, *P/C*.

Since the reversals of reduction rules are deduction rules (for deducing arguments from arguments), the *themata* can also be formulated as follows (which is indeed the way in which they usually are formulated):

Thema 1: From a valid argument *X*, *P/C*, one obtains a valid argument *X*, *cC/cP*.¹²²

Thema 3: From arguments *X/Q* and *Q*, *P/C*, one obtains a valid argument *X*, *P/C*.

¹²¹ Together, the last three *themata* did about the work of a cut rule in a sequent calculus.

¹²² Recall that *ccA* = *A*.

As our first example of a reduction in the Stoic system for propositional logic, we shall start from an argument put forward by the skeptic philosopher Aenesidemus: “If the things apparent appear in like manner to all those in similar condition (*A*), and the signs are things apparent (*S*), the signs appear in like manner to all those in similar condition (*L*); and the things apparent appear in like manner to all those in similar condition; but the signs do not appear in like manner to all those in a similar condition; therefore the signs are not things apparent” (Sextus Empiricus, 1933–1949, II, *Against the logicians* II(=AM VIII).234). It is possible to write down the reduction of precisely this argument, but it is easier to do so for its argument form¹²³:

1. If both *A* and *S* then *L*, *A*, Not-*L*/Not-*S*

Argument 1 reduces by *Thema 3* to

1.1 If both *A* and *S* then *L*, not-*L*/Not both *A* and *S* (undemonstrated of type two) and

1.2 *A*, Not both *A* and *S*/Not-*S* (undemonstrated of type three).

The reduction has been completed. Being reduced to two undemonstrated arguments, the initial argument has been shown to be valid and even to be a syllogism.

Our second example is a little more complicated.¹²⁴ We only give the argument forms:

1. If both if *A* then *B* and *C* then *D*, If *D* then *E*, Not-*E*, *C*/Not if *A* then *B*.

Argument 1 reduces by *Thema 1* to

2. If both if *A* then *B* and *C* then *D*, If *D* then *E*, If *A* then *B*, *C*/*E*.

Argument 2 reduces by *Thema 3* to

2.1. If both if *A* then *B* and *C* then *D*, If *A* then *B*, *C*/*D*

and

2.2 *D*, If *D* then *E*/*E* (undemonstrated of type 1).

Argument 2.1 reduces by *Thema 3* to

2.2.1 If *A* then *B*, *C*/Both if *A* then *B* and *C*

and

2.2.2 Both if *A* then *B* and *C*, If both if *A* then *B* and *C* then *D*/*D* (undemonstrated of type 1).

Argument 2.2.1 reduces by *Thema 1* to

2.2.1.1 If *A* then *B*, Not both if *A* then *B* and *C*/Not-*C* (undemonstrated of type 3).

Since all the unreduced arguments belong to the undemonstrated arguments, the reduction of the initial argument has been completed. This shows the argument to be valid and syllogistic.

¹²³ This reduction (or analysis) is provided by Sextus Empiricus, AM VIII.235–236. Although we only show the forms, we continue to speak of “arguments.”

¹²⁴ See Bobzien (1996, p. 161, n. 54) and Hitchcock (2002d, p. 58, S14).

Even though it remains unclear which arguments the Stoic system was intended to yield, and whether it did do so, we can still admire the ingenuity and the rigor applied to its construction and recognize its contribution to the study of arguments.¹²⁵

2.8 Aristotle's Rhetoric

In Sect. 2.2 we mentioned several key figures in the early development of rhetoric. Some of them are credited with the “invention” of rhetoric (Corax, Tisias, and Empedocles), others are known to have taught rhetoric (the sophists and Isocrates), and again others are known to have criticized and further developed the discipline (the handbook writers, Plato, and the anonymous writer of the *Rhetoric to Alexander*). Although these authors have formulated useful insights regarding the phenomenon of persuasion, Aristotle was not satisfied with their approach, which in his eye was too restricted (*Rhet.* I.1, 1354a11–18). His *Rhetoric* contains a new definition of rhetoric, criticisms of the teachings of his predecessors, as well as expositions of important rhetorical concepts. In this section, we shall discuss the main insights Aristotle developed.¹²⁶

2.8.1 The Definition of Rhetoric

According to Aristotle, the art of rhetoric resembles the art of dialectic in that it is not restricted to any particular domain of subjects (as the sciences are in Aristotle's view), but can be generally applied. Like other arts, it cannot guarantee success, but enables one to see what are real and what are merely apparent means of persuasion (*Rhetoric* I.1, 1355b7–17).

Unlike his predecessors, who defined *rhetoric* as the “art of words” or as the “worker of persuasion” (Gorgias's definition as described by Plato 1997, *Gorgias* 453a), Aristotle defines rhetoric as follows¹²⁷:

Rhetoric may be defined as the faculty of observing in any given case the available means of persuasion. This is not a function of any other art. Every other art can instruct or persuade

¹²⁵ According to Hitchcock, who proposes a new reconstruction of the system, it is “surprisingly difficult” to find argument forms with only propositional variables and the logical operators of the system that are valid, but cannot be shown to be valid within the system. “The difficulty is surprising because the system at first glance has glaring deficiencies.” Further he deems it noteworthy that the system “allows one to prove the validity of those arguments with formally valid moods [argument forms] expressible in the system which we are inclined to use in real reasoning and argument” (2002d, pp. 67–68).

¹²⁶ This section draws on Kennedy (2001) and Rapp (2010). See Rapp (2002) for a translation of Aristotle's *Rhetoric* into German with detailed commentary, including discussions of secondary literature.

¹²⁷ See also Aristotle's definition in *Topics* VI.12, 149b26–27 of the rhetorician as someone who is able to see the available means of persuasion in any given case.

about its own particular subject-matter; for instance, medicine about what is healthy and unhealthy, geometry about the properties of magnitudes, arithmetic about numbers, and the same is true of the other arts and sciences. But rhetoric we look upon as the power of observing the means of persuasion on almost any subject presented to us; and that is why we say that, in its technical character, it is not concerned with any special or definite class of subjects. (Aristotle 1984, Vol. 2, *Rhet.* I.2, 1355b26–35)

Starting from this definition, Aristotle discusses in Book I and II the finding of the material for a speech, which he calls *thought* (*dianoia*). In Book III, he discusses the wording of a speech, called *style* (*lexis*), the ordering of the different parts of the speech, called *arrangement* (*taxis*), and – to a very limited extent – the actual performance of the speech, called *delivery* (*hupokrisis*). These concepts are adopted by later authors under the heading of the *tasks of the speaker* (*rhêtoros erga* or *oratoris opera*), i.e., a list of the subsequent procedural steps the speaker has to accomplish in order to produce a persuasive speech. Eventually this list comprised five items: (1) the invention (*heuresis* or *inventio*), (2) the arrangement (*taxis* or *dispositio*), (3) the wording (*lexis* or *elocutio*), (4) the memorizing (*mnêmê* or *memoria*), and (5) the performance (*hupokrisis* or *actio*) of the speech. In the *Rhetoric*, Aristotle's main focus is on the first task of the speaker: the invention of arguments. Books I and II are entirely dedicated to this topic. Some scholars even believe that Book III, which is dedicated to other tasks, was originally a separate work, which was only later combined with Books I and II.

2.8.2 The Modes of Persuasion

As far as the invention of the contents of the speech is concerned, Aristotle makes several distinctions that were later canonized in the system of classical rhetoric (see Sect. 2.9). Among them is a basic distinction between modes of persuasion. According to Aristotle, some of the means of persuasion are *nontechnical*, i.e., they are not part of the art of rhetoric: they are not construed by the speaker but already present at the outset. He mentions as examples evidence provided by witnesses, evidence given by slaves under torture, and evidence provided by written contracts. Other means of persuasion are *technical* in the sense that they belong to the art of rhetoric because they are supplied by the speaker in the context of the process of persuading an audience of the acceptability of a certain standpoint with regard to the question at issue (*Rhet.* I.2, 1355b35–39).

On the basis of the observation that a speech involves a speaker, a subject, and an audience (*Rhet.* I.3, 1358a36–b2), Aristotle distinguishes three technical means (or “modes”) of persuasion:

Of the modes of persuasion furnished by the spoken word there are three kinds. The first kind depends on the personal character of the speaker; the second on putting the audience into a certain frame of mind; the third on the proof, or apparent proof, provided by the words of the speech itself. (Aristotle 1984, Vol. 2, *Rhet.* I.2, 1356a1–4)

Interestingly, Aristotle provides a psychological explanation of the persuasive effect of the first two technical modes of persuasion. The effectiveness of the *ethical*

mode of persuasion, when the speaker tries to achieve persuasion by presenting himself as a trustworthy person, is based on the psychological fact that “we believe good men more fully and more readily than others: this is true generally whatever the question is, and absolutely true where exact certainty is impossible and opinions are divided” (Aristotle 1984, Vol. 2, *Rhet.* I.2, 1356a6–8). When he returns to this means of persuasion in Book II of the *Rhetoric*, Aristotle remarks that “there are three things which inspire confidence in the orator’s own character – the three, namely, that induce us to believe a thing apart from any proof of it: good sense (*phronêsis*), excellence (*aretê*), and goodwill (*eunoia*)” (Aristotle 1984, Vol. 2, *Rhet.* II.1, 1378a6–8).

The effectiveness of the *pathetical* mode of persuasion, when the speaker tries to achieve persuasion by stirring the emotions of the audience, is based on the psychological fact that “our judgements when we are pleased and friendly are not the same as when we are pained and hostile” (Aristotle 1984, Vol. 2, *Rhet.* I.2, 1356a15–16). For this reason, Aristotle provides in *Rhet.* II.2–17 several definitions of emotions. Knowledge of these matters enables the speaker to highlight those aspects of the subject at issue that evoke in the audience the emotions relevant for the promotion of his case.

Although Aristotle says in Book I that the personal character of the speaker “may almost be called the most effective means of persuasion” (Aristotle 1984, Vol. 2, *Rhet.* I.2, 1356a13), his subsequent treatment of the various modes of persuasion focuses on the *logical* ones. Taking the distinction between deduction and induction made in the *Topics* and *Analytics* as a starting point, Aristotle divides in the *Rhetoric* (I.2) the logical means of persuasion into *enthymemes* (*enthymêmata*) and *examples* (*paradeigmata*). In enthymemes something is proven in a deductive way by making use of *signs* (*sêmeia*) or *probabilities* (*eikota*); in examples something is proven in an inductive way. Aristotle observes that in the rhetorical context of a speaker addressing an audience, the deduction employed in the enthymeme does not have to be complete. The members of the audience will usually be able to add the missing parts with the help of their background knowledge regarding the issue at hand: “The enthymeme must consist of few propositions, fewer often than those which make up a primary deduction. For if any of these propositions is a familiar fact, there is no need even to mention it; the hearer adds it himself” (Aristotle 1984, Vol. 2, *Rhetoric* I.2, 1357a16–19). As to the use of signs, Aristotle makes a distinction between using *non-necessary signs*, which make a refutable argument, and using *necessary signs* (*tekmêria*), which make an irrefutable one.

Aristotle’s distinctions regarding the technical means of persuasion that are available to the speaker are summarized in Fig. 2.5.

2.8.3 The Three Genres

Another important distinction made by Aristotle and adopted by most authors is the distinction (in *Rhet.* I.3) between three genres (*genê*, singular: *genos*) of speeches (or “genres of rhetoric”). Aristotle provides the following rationale for the

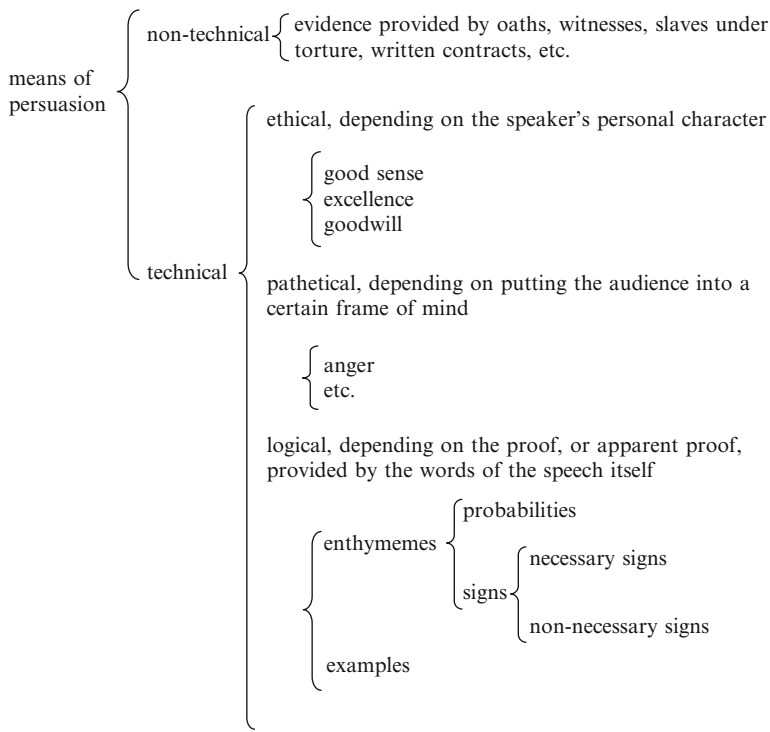


Fig. 2.5 Aristotle's distinctions regarding the means (or modes) of persuasion

distinction. When listening to a speech, the audience may either judge whether the standpoint defended by the speaker is made acceptable or observe the rhetorical qualities of the speaker. In the former case, the question at issue may either pertain to acts performed in the past or to acts to be performed in the future. It follows from these considerations that there are three genres of speeches to be dealt with: (1) the *deliberative genre* (*genos sumbouleutikon*), in case the audience judges the acceptability of the speaker's qualification of a future act as (dis)advantageous; (2) the *judicial genre* (*genos dikanikon*), in case the audience judges the acceptability of the speaker's qualification of a past act as just or unjust; and (3) the *exhibiting genre* (*genos epideiktikon*), in case the audience observes the rhetorical qualities of the speaker who puts forward a non-controversial standpoint about someone or something to be either praised or blamed. The three genres and their characteristics are summarized in Fig. 2.6.

2.8.4 Rhetorical Topoi

As happens in the *Topics*, the *Rhetoric* provides descriptions of *topoi* that may help the speaker in finding arguments for specific standpoints (see Sect. 2.3). Making use

<i>Genre</i>	<i>Function of the audience</i>	<i>Subject</i>	<i>Subgenres</i>
Deliberative	judge	(dis)advantageousness of future acts	exhortation and dissuasion
Judicial	judge	justness of past acts	prosecution and defence
Exhibiting	observer	honourability of persons or events	praise and blame

Fig. 2.6 Aristotle's description of the three genres of speech

of the distinction regarding the genres of speech, Aristotle distinguishes in the *Rhetoric* between *common topoi* (*koinoi topoi*), which can be used to construct enthymemes in all genres, and *special topoi* (*idia*), which are based on propositions that belong to sciences relevant to specific genres of speech.

In *Rhetoric* II.23, Aristotle presents a list of 28 common *topoi*. As in the *Topics*, each description of a *topos* usually consists of the following elements (not all of which are always present): the name of the *topos*, a general law, instructions for the arguer, some examples, and some further comments. Although the topics mentioned in the *Rhetoric* overlap with those that can be found in the *Topics*, the list is not just a shorter version of the material provided in the *Topics*; it is a selection of those topics that are particularly useful for speakers who are preparing a speech (of any genre). According to Braet, “Aristotle did not arrive at his dialectical topics in the same way as his rhetorical *topoi*: the former seem to have been devised deductively and the latter inductively, from rhetorical practice,” and this is “one of the reasons that the topics from the *Rhetoric*, with all the causal types which do not appear in the *Topics*, is closer to today's argumentation schemes” (2005, p. 67).¹²⁸

According to Braet, the common *topoi* mentioned in the *Rhetoric* can be classified according to the themes they pertain to: opposition, comparison, classification, induction,¹²⁹ authority, and causality (Braet 2007, pp. 168–171). For each theme, Aristotle gives one or more *topoi* that help the arguer to construct enthymemes that are suitable to persuade the audience.

2.8.5 Rhetorical Fallacies

After having listed the common *topoi*, Aristotle presents in *Rhetoric* II.24 ten *topoi* of merely apparent enthymemes or – as we would say – ten (or nine) types of fallacies. This list, which supposedly originated in rhetorical practice, is at some points markedly different from the list included in *Sophistical refutations*. Only three of the thirteen types of fallacies treated in *Sophistical refutations* return, as far as we can tell, unchanged: equivocation, *secundum quid*, and consequent. Five

¹²⁸ On the sources and background of the list of *topoi* in *Rhetoric* II, 23, see Rambourg (2011).

¹²⁹ Notice that examples (rhetorical inductions) are here reckoned to be among the enthymemes (rhetorical deductions).

types of fallacies have been altered, often preserving no more than the name (composition, division, form of expression, accident, and non-cause), whereas five other types do not return at all: amphiboly, accent, *ignoratio elenchi*, begging the question, and many questions. Figure 2.7 gives a survey. Of the first two items in the survey, which are commonly counted as subtypes of one type of fallacy, Aristotle says that they are fallacies dependent on the use of language (*para tēn lexin*).

2.8.6 Other Contributions

Aristotle's contributions regarding other tasks of the speaker are less extensive and influential than the contributions regarding the invention mentioned above. As to the arrangement, he discusses in *Rhet.* III.13–19 the parts of a speech, of which he considers the standpoint and the arguments to be the most important. As to the wording of a speech, which he discusses in *Rhet.* III.1–12, Aristotle emphasizes the importance of “clarity” and provides accounts of the “simile” and the “metaphor” (*Rhet.* III.2–4, III.10–11).

2.9 The System of Classical Rhetoric

Unlike classical dialectic and logic, for which disciplines Aristotle provided the most significant contributions, classical rhetoric has many fathers. From the fifth century BC until the second century AD, various Greek and Roman writers contributed to the development of a systematic set of prescriptions on how to effectively deliver a persuasive speech. Quintilian's *Oratorical education* (Latin: *Institutio oratoria*), written approximately AD 150, is generally viewed as the most elaborate summary of this *system of classical rhetoric*.¹³⁰

The system of classical rhetoric has various components, most of which can be described as subordinate doctrines addressing specific aspects of the production process of a speech.¹³¹ Among these components are a doctrine of the subsequent tasks of the speaker (*rhētoros erga; officia oratoris* or *oratoris opera*), a doctrine of the different speech genres or genres of rhetoric (*genē tou logou* or *tēs rhetorikēs genē/leidē; genera causarum* or *rhetorices genera*), a typology of possible responses to an accusation (*stasis* theory; *status* theory), a doctrine of the parts of a speech (*logou merē; orationis partes*), and many other more or less systematized sets of rhetorical instructions. Since these subordinate doctrines are interrelated, the

¹³⁰ For detailed expositions of the system of rhetoric, see Lausberg (1998), Fuhrmann (2008), Martin (1974), and, from a historical perspective, Kennedy (1994, 2001) and Pernot (2005).

¹³¹ Throughout our discussion of the components of the system, we will mostly use the English name of the component at issue (followed at the first mentioning by (1) the Greek name and/or (2) the Latin name, in parentheses).

English	Greek	Translation	Characterization	Comparison with <i>Sophistical Refutations</i>
1. Form of expression	<i>para to schêma tês lexeôs</i>	based on the form of expression	using a style of language that makes one think that there really is an enthymeme	different
2. Equivocation	<i>para tèn homônúman</i>	based on equivocation	exploiting ambiguities	same
3. Composition and division	<i>to diêirêmenon suntithenta legein ê to sugkeimenon diairounta</i>	arguing while composing what is divided or while dividing what is composed	assuming that what holds for the whole and what holds for the parts is the same	different
4. Exaggeration	<i>deinôsei kataskeuazein ê anaskeuazein</i>	constructing or demolishing (an argument) by exaggeration	using verbal violence and emotion, a kind of <i>non sequitur</i>	not in <i>Sophistical Refutations</i>
5. From sign	<i>to ek sêmeiou</i>	from a sign	reasoning from a non-necessary sign to what it is supposed to be a sign of	a special case of consequent
6. Accident	<i>dia to sumbebêkos</i>	through what is accidental	basing one's reasoning on accidental effects	different
7. Consequence	<i>para to hepomenon</i>	based on the consequent	confusing necessary and sufficient conditions	same
8. <i>Post hoc ergo propter hoc</i>	<i>para to anaition hôs aition</i>	based on taking what is not the cause as the cause	taking temporal order as sufficient for causation	different from non-cause
9. <i>Secundum quid</i> (time and manner)	<i>para tèn elleipsin tou pote kai pôs</i>	based on the omission of the when and the how	neglecting the difference between propositions that hold without qualification and those that refer to a specific time or manner	special cases of <i>secundum quid</i>
10. <i>Secundum quid</i> (other cases)	<i>para to haplôs kai mê haplôs, alla ti</i>	based on holding without qualification and not so, but holding for a particular case	neglecting other qualifications, or the lack thereof, that propositions may need in order to hold	other cases of <i>Secundum quid</i>

Fig. 2.7 *The fallacies in the Rhetoric*

tasks	subordinate doctrines
invention of the standpoint (<i>noësis</i> ; <i>intellectio</i>)	- speech genres (<i>genê tou logou</i> or <i>tês rhetorikês genê</i> ; <i>genera causarum</i> or <i>rhetorices genera</i>) - degrees of defensibility (<i>causarum genera</i>) - <i>status</i> theory - modes of persuasion - topics (<i>topoi</i> ; <i>loci</i>)
of the arguments (<i>heuresis</i> ; <i>inventio</i>)	
arrangement (<i>taxis</i> ; <i>dispositio</i> or sometimes <i>ordo</i>)	- parts of a speech (<i>logou merê</i> ; <i>orationis partes</i>)
wording (<i>lexis</i> ; <i>elocutio</i>)	- virtues (<i>virtutes</i>) of style - kinds of style (<i>genera dicendi</i>) - embellishments (<i>ornatus</i>): tropes and figures
memorization (<i>mnemê</i> ; <i>memoria</i>)	- the art of memory (mnemonics)
performance (<i>hupokrisis</i> ; <i>actio</i> or <i>pronunciatio</i>)	- the art of gestures - the art of facial expressions - the art of voice intonations

Fig. 2.8 Overview of the various components of the system of classical rhetoric

system of classical rhetoric can be expounded in various ways. One could, for instance, first explain of which parts a speech consists and then explain for each part of the speech what type of persuasive means the speaker should employ. Most rhetoricians have taken either the doctrine of the tasks of the speaker or the doctrine of the parts of a speech as the organizational principle for their didactical exposition of the various components of the system. In our description, we will follow the former organizational principle. The other main components of the system of classical rhetoric can be subsumed under the various tasks of the speaker as shown in Fig. 2.8.

2.9.1 Invention

The first task a speaker has to accomplish is called the *invention* (*inventio*), i.e., the invention of the contents of the speech. This task comprises the invention and analysis of the standpoint, sometimes conceived as a subtask called the *noësis* or *intellectio*, as well as the invention of the arguments supporting the standpoint, the *inventio* proper.

As to the *intellectio*, several theories have been developed to classify the standpoints at issue in a speech. One of them is the doctrine of the various speech genres (*genera causarum* or *rhetorices genera*) exemplified by the seven types of speeches in the *Rhetorica ad Alexandrum* discussed in Sect. 2.2 as also in Aristotle’s distinction between the judicial genre (*genos dikanikon*; *genus iudiciale*), the deliberative genre (*genos sumbouleutikon*; *genus deliberativum*), and the exhibiting genre (*genos epideiktikon*; *genus demonstrativum*), discussed

in Sect. 2.8. Another example is the doctrine of the degrees of defensibility of the standpoint. This doctrine is, confusingly, also referred to as *causarum genera*. This time, however, *causa* refers not to the speech but to the standpoint, specifically to the standpoint as it is judged by the audience prior to the delivery of the speech. If the speaker intends to defend a standpoint that corresponds with the audience's judgment or prejudice about the issue at stake, the standpoint belongs to the honorable genre (*honestum genus*). If the standpoint challenges the audience's sense of justice or truth, it belongs to the doubtful or wavering genre (*dubium* or *anceps genus*). And if it shocks the audience's sense of justice or truth, it belongs to the shocking genre (*turpe* or *admirabile genus*). Apart from these three basic classifications, some rhetoricians distinguish the petty genre (*humile genus*) for standpoints that are completely in accordance with the opinion of the audience and the complex genre (*obscurum genus*) for standpoints that exceed the cognitive capacities of the audience. The relevance of the doctrine of the degrees of defensibility is based on the fact that the different types of standpoint require different rhetorical strategies to achieve an optimal persuasive effect. For instance, if the standpoint belongs to the shocking genre, the speaker is advised to state the standpoint he wishes to defend not too bluntly at the beginning of the speech, but to introduce it by a detour (*insinuatio*).

Another important contribution to the *intellectio* stems from Hermagoras of Temnos (second century BC), who wrote a handbook on rhetoric that contains a theory on the determination of the standpoint at issue – the so-called *status* (Greek: *stasis*) theory. Although the handbook is now lost, the theory can be reconstructed from later reports by Cicero, Quintilian, and others.¹³² The *status* theory is different in nature than the theories just mentioned. Whereas the theory of speech genres qualifies the standpoint in terms of the temporal aspects of its propositional content, and the theory of the degrees of defensibility does so in terms of the audience's initial doxastic attitude towards the subject matter, the *status* theory qualifies the standpoint in terms of the kind of difference of opinion that arises from the confrontation between two parties in a legal dispute. The theory takes as a starting point that the speech under consideration is a response to an accusation made by the other party. Possible responses to such an accusation are divided into four main categories: (1) denial, (2) redefinition, (3) justification or exoneration, and (4) raising doubt with regard to the legitimacy of the judge.

Depending on the response chosen, the *status* is the main question the judge will have to answer. In the case of a *denial* of the accusation, the difference of opinion between the accuser and the defendant concerns the facts. This response generates the *status coniecturalis*, which means that the judge will, for instance, have to answer the question: "Did he kill someone?" In the case of a *redefinition* of the accusation, the difference of opinion between the accuser and the defendant concerns the juridical qualification of the facts. This response generates the *status definitionis*, which means that the judge will, for instance, have to answer the

¹³² Woerther (2012) provides a new edition of the reports of Hermagoras's work.

question: “Is the killing to be qualified as murder or as manslaughter?” In the case of a *justification* of the deed, the difference of opinion between the accuser and the defendant concerns the justifiability of the deed. This response generates the *status qualitatis*, which means that the judge will, for instance, have to answer the question: “Was the killing justifiable?” The last possible response distinguished within this system is *raising doubt with regard to the legitimacy of the judge*. This response generates the *status translationis*, which is of a somewhat different nature than the other ones because it concerns the issue (mostly preliminary in modern law) as to whether the case is brought up in front of the right court.

Although the *status* theory is especially suitable for judicial speeches, it may be applied – after the necessary adaptations – for the determination of the standpoint of deliberative and exhibiting speeches as well. After Hermagoras, the *status* theory has been extended and refined by other authors. This applies especially to the *status qualitatis*, which describes the ways in which the accused may justify his deeds. The most important extension of the *status* theory is the one proposed by Hermogenes of Tarsus (*floruit* ca. AD 161–180), who describes in his *Peri staseôn* [On issues] fourteen different options of choosing a standpoint.

Once the speaker has decided upon the standpoint he is going to defend in his speech, he moves on to the task of finding what to say to get the audience to accept the standpoint – the *inventio* proper. The first systematic theory of invention was developed by Aristotle, whose distinction between ethical, logical, and pathetical modes of persuasion we discussed in Sect. 2.8. As to the logical means of persuasion, most rhetoricians take over Aristotle’s distinction between the example (*paradeigma*; *exemplum* or *inductio*) and the enthymeme or rhetorical syllogism (*enthymêma*; *argumentum* or *ratiocinatio*). However, the anonymous *Rhetorica ad Herennium* (ca. 85 BC)¹³³ contains an important addition to these types of logical means of persuasion, called the *epicheireme* (*epicheirêma*). In this work, the *epicheireme* is conceived as a combination of the two means just mentioned, involving five elements: the thesis to be defended (*propositio*), a reason (*ratio*), a subordinate argument in support of the reason (*rationis confirmatio*), a further elaboration of the reason (*exornatio*), and the quintessence of the argumentation (*complexio*), which may take the form of a résumé (*enumeratio*) or a conclusion (*conclusio*) (*Rhetorica ad Herennium* II.28).

The basic structure of the *epicheireme* has been adapted by later authors. Some of them do not deem all five elements equally important, or even necessary, for an argumentation to be called an “*epicheireme*.” Others redefine an *epicheireme* as an extended syllogism, adding in their examples subordinate arguments for one or both of the premises involved. According to Cicero (*De inventione* I.67), for instance, the *epicheireme* consists of the major premise (which is called *propositio*, although it is not the same as the thesis to be defended), a subordinate argument in support of the major premise (*propositionis adprobatio*), the minor premise

¹³³ Sometimes ascribed to Quintus Cornificius.

(*adsumptio*), a subordinate argument for the minor premise (*adsumptionis adprobatio*), and the conclusion (*complexio*).

As to the ethical and pathetic means of persuasion, most later rhetoricians follow Aristotle's definitions. Others took over Cicero's redefinition in *De oratore* of these modes as two different forms of emotional appeal. According to Cicero, the ethical means of persuasion make use of the long-term emotion of trust, while the pathetic means rely on short-term emotions like anger.

A second important theory of invention is that of the *topoi* (*loci*). Aristotle's distinction of common and specific *topoi* was extended and refined by later writers, most notably by Cicero and Boethius (see Sect. 2.5). Whereas some scholars interpret the theory of *topoi* solely as a theory of the various ways in which an argument may justify a standpoint, others state that it is also a theory of the way in which a speaker may find the appropriate arguments for defending his standpoint. As we explained earlier in this chapter, these interpretations are complementary rather than excluding each other. Depending on their formulation, most of the *topoi* may be attributed a heuristic as well as a justificatory function.

Some of the *topoi* are general in the sense that the speaker can use them in all speech genres. Others are specific in the sense of being especially suitable for the construction of arguments in a judicial, political, or exhibiting speech. For example, since political decisions are taken by evaluating the arguments for or against a proposed action or policy, the list of *topoi* for political speeches consists of typical ways in which such an action can be defended or criticized. The speaker in favor of the action may emphasize that the action is just or legal, that it is expedient or gives pleasure, or that the proposed action is possible, necessary, or easy to perform.

2.9.2 Arrangement

The second task a speaker has to accomplish is called *arrangement* (*dispositio*), i.e., the arrangement of the speech. Apart from the contents of the speech, rhetoricians deemed it important in what order the standpoint, the reasons, and the other utterances in support of it are presented to the audience. Their advice on this issue slowly developed into a standard theory of the parts of a speech (*merê tou logou*; *partes orationis*). From a didactical point of view, the theory provides an ideal framework for the explanation of other rhetorical instructions. In our discussion below, we will mention for each main part the most important rhetorical instructions that relate to it.

The first part, the introduction (*prooimion*; *exordium*, *prooemium* or *principium*), is divided into several subparts. The speaker should present an exposition of the problem and the relevant information at hand (*diêgêsis*; *narratio*).¹³⁴ Also, he should present his standpoint with regard to the problem (*prothesis*; *propositio*).

¹³⁴ Often rhetoricians treat the first subpart of the introduction as a separate part of the speech (*pars orationis*).

Finally, he should provide the audience an overview of the remaining elements of the speech (*prokataskeuê*; *partitio* or *divisio*). The main functions of the first part of the speech are to catch the audience's attention, to make the audience understand the *topos* at issue, and to win the audience's goodwill. As to the exposition of the problem and the relevant information at hand, the speaker is advised to present them in a clear, succinct, and plausible manner.

In the second part, the middle part or the proof (*pisteis* or *agônes*; *argumentatio*), the speaker should present his arguments. Most rhetoricians divide this part of the speech into a subpart containing the arguments in favor of the standpoint of the speaker (*pistis* or *apodeixis*; *confirmatio* or *probatio*) and a subpart containing the arguments against the standpoint of the speaker's opponent (*lusis*; *refutatio*, *confutatio*, or *reprehensio*).

In the third and last part of the speech, the epilogue or conclusion (*epilogos*; *peroratio*, *conclusio* or *epilogus*), the speaker is advised to restate the standpoint as well as the main arguments (*anakephalaiôsis*; *recapitulatio* or *enumeratio*). The function of the last part of the speech is to enhance the audience's acceptance of the speaker's standpoint regarding the issue at hand by appealing to the audience's cognitive as well as emotional capacities.

Rhetoricians disagree about the necessity as well as the relative importance of the parts of the speech mentioned above. According to Aristotle, the *propositio* and the *argumentatio* are the only necessary components of a speech (*Rhet.* III.13). Others mark the *propositio* as optional, or add a digression (*digressio*) between the first and the second part. Also, rhetoricians disagree about the relation between the theory of the modes of persuasion and that of the parts of a speech. Some propagate the idea that the speaker should employ ethical means in the beginning of the speech, logical means in the middle, and pathetical means at the end. Others are of the opinion that there is no preferred position for the various modes of persuasion and that the speaker should employ all three of them throughout the whole speech.

The task of arrangement (*dispositio*) does not only comprise the ordering of the main parts of the speech but also the ordering of the elements within the main parts. The most important of these internal orderings is that of the arguments. According to some rhetoricians, the speaker should place the arguments in an order of increasing strength or in an order of decreasing strength. Others advice to place the weaker argument in the middle and the stronger arguments in the beginning and at the end. This is called the *Nestorian order* or the *Homeric disposition* (Quintilian, *Oratorical education* V.12.14), named after the Homeric hero and commander Nestor, to whom people attribute the invention of the battlefield strategy of placing the weaker parts of the army in the middle.¹³⁵

¹³⁵ In *Iliad* 4.297–9, Nestor arranges his troops in that order: “And first he arrayed the horsemen with horses and chariots, and behind them the foot-soldiers, many and valiant, to be a bulwark of battle. But the weaklings he drove into the midst.” See also Perelman (1982, p. 148).

2.9.3 Wording

The third task a speaker has to accomplish is called the *wording* (*elocutio*), i.e., the putting into words of the speech as conceived. Aristotle's remarks regarding this task had less influence on later authors than those regarding the tasks we have discussed. It was his student Theophrastus who developed a doctrine of the virtues (*virtutes*) of style that was much later canonized in the system of classical rhetoric. Important later writers on the virtues of style include Dionysius of Halicarnassus (*floruit* 30 BC), who wrote several works on the subject, and Hermogenes of Tarsus, whom we already met as an author on status theory. Hermogenes distinguishes in his *Peri ideôn* [On ideas, or: On types of style] seven main categories of virtues of style. Most rhetoricians, however, distinguish only four main categories. The first one is grammatical correctness (*hellênismos*; *latinitas*), which is sometimes set apart as a grammatical rather than a rhetorical virtue. The other three are clarity (*perspicuitas*), embellishment (*ornatus*), and aptness (*aptum* or *decorum*). Of the instructions regarding these virtues, those concerning the embellishment are the most elaborate. They often comprise descriptions of tropes (*tropoi*; *tropi*), such as metaphor, hyperbole, and litotes, as well as figures (*figurae*), such as repetition, ellipsis, anastrophe, and oxymoron.

Theophrastus was possibly also the first one to develop a theory on the kinds of style (*genera dicendi*). In later works, such as the anonymous *Rhetorica ad Herennium* and Cicero's *Brutus* and *Orator*, a threefold typology was developed, consisting of a "simple" style (*genus subtile*), a "middle" style (*genus medium*), and a "grand" style (*genus grande*). In Demetrius' *De elocutione* (probably first century BC), an alternative typology is described, consisting of an "elevated" style (*megaloprepês*), a "plain" style (*ischnos*), an "elegant" style (*glaphuros*), and a "forceful" style (*deinos*). The description of the properties of these types of style can be interpreted as a summary of the rhetorical instructions concerning the virtue of aptness.¹³⁶

2.9.4 Memorization

The fourth task the speaker has to accomplish is called *memorization* (*memoria*), i.e., the committing to memory of all the elements of the speech. The relevance of this task stems from the fact that in antiquity it was not allowed to let someone else like a lawyer present a juridical speech on your behalf in front of the jury; also it was technically impossible, or at least ineffective, to read a political speech in front of an assembly. Having completed the previous three tasks, the speaker should therefore learn by heart not only the contents of the speech but also its order as well

¹³⁶ For a systematic description of the various tropes, figures, and kinds of style, see, for instance, Lausberg (1998).

as its wording. For doing so, he could make use of the prescriptions from the “art of memory” or *mnemonics*. The basic idea of the memorization method is that the speaker should establish symbolic or otherwise meaningful relations between the contents of his speech and a number of objects he imagines to be placed in a familiar space, e.g., his house. By taking, when delivering his speech, a specific imaginary walk through the house and meeting in it the objects in the order they are placed, the speaker recalls the content as well as the wording of his speech.¹³⁷ Mnemonics slowly developed into an art of its own and was less and less considered to be a proper part of the system of rhetoric.¹³⁸

2.9.5 Performance

The fifth and last task the speaker has to accomplish is called *performance (actio)*, i.e., the actual delivery of the speech. Under this heading, rhetoricians collected their advice concerning the nonverbal aspects of delivering a speech, like the use of facial expressions, the voice, and the hands. Like in the case of memorization, later a great many rhetoricians no longer considered this task to constitute a basic part of rhetoric. Some parts of it slowly developed into an art of their own, like the art of facial expressions and the art of gestures.

2.10 The Classical Heritage

After having presented the emergence and development of the classical disciplines of dialectic, logic, and rhetoric in antiquity, we will briefly sketch how they relate to later developments in the Middle Ages, the Renaissance, the modern period, and in present-day argumentation theory.

2.10.1 Dialectic and Logic

During late antiquity, the disciplines of dialectic and logic more and more converged up to the point where they finally merged in the Middle Ages. The main goal of scholars representing the combined discipline, which was mostly referred to as *dialectic*, was to preserve the insights regarding the validity of reasoning that were developed in antiquity.¹³⁹ Medieval scholars wrote commentaries on Aristotle’s,

¹³⁷ In Sect. 2.3, we mentioned that the term *topos* may also have its origin in this mnemonic technique.

¹³⁸ For a discussion of the art of memory, see Yates (1966).

¹³⁹ See Stump (1989) for the place of dialectic in the development of medieval logic.

Cicero's, and Boethius' works on the topics and on Aristotle's treatment of the fallacies.¹⁴⁰ In teaching, dialectic (now including logic) was considered part of the *trivium*: the three of the seven liberal arts that were related to language (grammar, dialectic, and rhetoric).¹⁴¹ The idea behind the *trivium* and the didactical order of the teaching is that students should first learn how to use language in a correct manner (grammar), then how to reason in a valid manner (dialectic), and finally how to adapt and embellish their reasoning when communicating it to an audience (rhetoric).

In the Middle Ages, dialectical debates evolved into specific types of logical games: the tradition of the *obligationes* and *disputationes*.¹⁴² In the Renaissance, humanist scholars, such as Ramus and Agricola, revived the tradition of dialectic in the Aristotelian sense, i.e., as the art of conducting a discussion rather than as the art of reasoning.¹⁴³

In the nineteenth century, the discipline of logic transformed into a purely formal discipline, in which reasoning was studied without taking the context of a discussion into account. In philosophical writings of this period, the term *dialectic* mainly refers to the processes of transformation in ideas, history, and society, as described by Fichte, Hegel, and Marx. In the twentieth century, different interpretations of Aristotle's theory of fallacies as being either a logical or a dialectical approach are reflected in the modern approaches to fallacies. In most twentieth-century textbooks, fallacies are conceived as mistakes in reasoning rather than as unreasonable discussion moves and thus as an object of study for logic rather than dialectic. Moreover, throughout the intervening centuries, Aristotle's original list of fallacies in *On sophistical refutations* scholars had been subjected to all kinds of changes, extensions, and reinterpretations. Sometimes the result was that the ancient and the modern version of a particular type of fallacy had no more in common with each other than the label. By the mid-twentieth century, the study of fallacies was in a sorry state.¹⁴⁴

Charles Hamblin observed this negative state of affairs in his influential book *Fallacies* (1970), in which he discusses Aristotle's list and surveys the history of the study of fallacies since Aristotle. Hamblin surveyed and severely criticized treatment of the fallacies in the introductory logic textbooks of his day

¹⁴⁰ See Green-Pedersen (1984) for an extensive overview and discussion of medieval works on the topics; Butterworth (1977) for Averroes's commentary on Aristotle's *Topics*; Ebbesen (1981) for a study of post-Aristotelian and medieval commentaries on Aristotle's *Sophistical refutations*; and Ebbesen (1993), Green-Pedersen (1987), and Pinborg (1969) for the theory of *loci* in the Middle Ages.

¹⁴¹ The other four liberal arts, which constituted the *quadrivium*, were arithmetic, geometry, astronomy, and music (harmonics).

¹⁴² See, for instance, Dutilh Novaes (2005), Spade (1982), Stump (1982), Yrjönsuuri (1993), and Yrjönsuuri (Ed., 2001).

¹⁴³ Developments in Medieval and Renaissance dialectic are discussed in Mack (1993), Spranzi (2011), Moss and Wallace (2003), and Ong (1958).

¹⁴⁴ For the state of affairs in the so-called Standard Treatment, see Sect. 3.5 of this volume.

(see [Sects. 3.5 and 3.6](#) of this volume).¹⁴⁵ According to Hamblin, Aristotle's theory of fallacies is part and parcel of his theory of dialectic, and the fallacies Aristotle discusses must be interpreted in a dialectical context. Thus, Hamblin inspired fallacy theorists to return to the classical heritage and take a dialectically oriented approach. See the discussions of the dialectical view of Næss in [Sect. 3.8](#), the formal dialectical approaches in [Chap. 6, "Formal Dialectical Approaches"](#), the dialectical elements in informal logic in [Chap. 7, "Informal Logic"](#), the pragma-dialectical theory of argumentation in [Chap. 10](#), and the dialectical approaches in the study of argumentation and artificial intelligence in [Chap. 11, "Argumentation and Artificial Intelligence"](#).

Apart from the notion of a "fallacy," several other notions developed within the ancient dialectical tradition still play an important role in contemporary approaches to argumentation. This holds, for instance, for the notion of a *topos* as a description of the relation between the reason advanced in support of a standpoint and the standpoint. This notion seems to come close to what in present-day argumentation theory is referred to as an "argument scheme" (or "argumentation scheme"). Influential approaches to argument(ation) schemes are discussed in [Chap. 5, "The New Rhetoric"](#) on the new rhetoric, [Chap. 7, "Informal Logic"](#) on informal logic, [Chap. 10, "The Pragma-Dialectical Theory of Argumentation"](#) on pragma-dialectics, and [Chap. 11, "Argumentation and Artificial Intelligence"](#) on argumentation and artificial intelligence.

Several of the main present-day approaches to argumentation may even be characterized as being *dialectical*. This goes for *formal dialectics*, in which the tools of formal logic are extended by developing formal models of a discussion (see [Chap. 6, "Formal Dialectical Approaches"](#)). In the analysis and evaluation of argumentative texts in *informal logic*, a dialectical perspective often plays an important role, in particular in the contributions made by Finocchiaro and by Walton (see [Chap. 7, "Informal Logic"](#)). And in *pragma-dialectics*, an ideal model of a critical discussion is developed based on a combination of dialectical insights and pragmatic insights (see [Chap. 10, "The Pragma-Dialectical Theory of Argumentation"](#)).

2.10.2 Rhetoric

The system of classical rhetoric depicted in [Sect. 2.9](#) was taught in schools since late antiquity. In the Middle Ages, rhetoric was part of the *trivium*. During the Renaissance and the early modern period, the emphasis within the teaching of rhetoric shifted gradually from *inventio* to *elocutio*, in particular after *inventio* had been included in dialectic. In line with this development, the domain of application

¹⁴⁵ The uniformity Hamblin observed in the way the fallacies are treated in the textbooks led him to dub this chapter "The Standard Treatment." However, the uniformity in the textbooks is not as striking as Hamblin suggests. See Hansen (2002). For differences within the standard treatment in dealing with the *argumentum ad hominem*, see van Eemeren and Grootendorst (1993, pp. 54–57).

	LOGIC and DIALECTIC	RHETORIC
5 th century BC	<p>ZENO OF ELEA (probably ca. 490-430 BC) <i>Paradoxes (Antinomies)</i></p>	<p>CORAX, TISIAS (ca. 460 BC)</p> <p>EMPEDOCLES OF AGRIGENTUM (ca. 490-430 BC)</p> <p>THE “HANDBOOK WRITERS” (see Plato, <i>Phaedrus</i>, 266d-276d)</p> <p>SOPHISTS</p> <p>GORGAS (ca. 485-380 BC) <i>The encomium of Helen</i> <i>The defence of Palamedes</i></p> <p>PROTAGORAS (ca. 485-410 BC) <i>Counterarguments</i></p> <p>ANTIPHON OF RHAMNUS (?) (ca. 475-411 BC) <i>Tetralogies</i></p>
4 th century BC	<p>PLATO (ca. 427-347 BC)</p> <p>(I) Socratic refutation debate <i>Apology, Hippias minor, Euthyphro, Laches, Lysis, Charmides, Protagoras, Gorgias</i></p> <p>(II) Method of hypothesizing <i>Meno, Phaedo, Republic, Parmenides</i></p> <p>(III) Method of collection and division <i>Phaedrus, Sophist, Statesman, Philebus</i></p> <p>ARISTOTLE (384-322 BC) <i>Categories</i> <i>On interpretation</i> <i>Prior analytics</i> <i>Posterior analytics</i> <i>Topics</i> <i>Sophistical refutations</i> <i>Metaphysics</i></p> <p>PERIPATETICS</p> <p>THEOPHRASTUS OF ERESUS (ca. 371-286 BC)</p> <p>STRATO OF LAMPACUS (ca. 335-269 BC)</p> <p>MEGARIANS</p> <p>EUCLIDES OF MEGARA (ca. 430-360 BC)</p> <p>STILPO OF MEGARA (ca. 370-290 BC)</p> <p>DIODORUS CRONUS (died ca. 284 BC)</p>	<p>ISOCRATES (436-338 BC) <i>The panegyric</i> <i>Against the sophists</i> <i>An exchange (Antidosis)</i></p> <p>PLATO (ca. 427-347 BC) <i>Gorgias</i> <i>Phaedrus</i></p> <p>ARISTOTLE (384-322 BC) <i>Collection of arts</i> (now lost) <i>Rhetoric</i> (ca. 335 BC)</p> <p>ANAXIMENES OF LAMPACUS (?) (ca. 380-320 BC) <i>Rhetoric to Alexander</i> (ca. 340 BC)</p> <p>THEOPHRASTUS (ca. 371-286 BC) <i>On style</i></p>

Fig. 2.9 (continued)

3rd century BC	MEGARIANS (CONT.) PHILO OF MEGARA (<i>floruit</i> 300 BC) STOA ZENO OF CITIUM (ca. 335-264 BC) CHRYSIPPUS OF SOLI (ca. 280-206 BC)	
2nd century BC	STOA (CONT.) ANTIPATER OF TARSUS (ca. 150 BC)	HERMAGORAS OF TEMNOS <i>Art of rhetoric</i> (ca. 135 BC)
1st century BC	MARCUS TULLIUS CICERO (106-43 BC) <i>Topica</i> (44 BC) DIOCLES OF MAGNESIA (ca. 40 BC) <i>Survey of the philosophers</i>	QUINTUS CORNIFICIUS (<i>floruit</i> 69 BC) possibly author of: <i>Rhetoric for Herennius</i> (ca. 85 BC) MARCUS TULLIUS CICERO (106-43 BC) <i>On invention</i> (ca. 89 BC) <i>On the best kind of orator</i> (56 BC) <i>About the orator</i> (55 BC) <i>Divisions of rhetoric</i> (? ca. 53 BC) <i>On the best way of saying things</i> (46 BC) <i>Brutus</i> (46 BC) <i>The orator</i> (46 BC) DEMETRIUS (?) (1 st century BC or AD) <i>On style</i> (1 st century BC or AD) DIONYSIUS OF HALICARNASSUS (<i>floruit</i> 30 BC) <i>About ancient orators</i> <i>About Thucydides</i> <i>Literary epistles</i> <i>On literary composition</i> <i>On imitation</i> <i>The art of rhetoric</i> (?)
1st century		QUINTILIAN (ca. 40-ca. 96) <i>On the causes of spoiled rhetoric</i> <i>Oratorial education</i> (ca. 94)
2nd century	PS.-APULEIUS <i>On interpretation</i> GALEN OF PERGAMUM (ca. 129-199) <i>Introduction to dialectic</i> AULUS GELLIUS (ca. 130-180) <i>Attic nights</i> SEXTUS EMPIRICUS (ca. 200) <i>Outlines of Pyrrhonism</i> <i>Against the mathematicians</i> ALEXANDER OF APHRODISIAS (<i>floruit</i> 200) <i>Commentaries on the eight books of Aristotle's Topics</i> <i>Commentary on Book I of Aristotle's Prior Analytics</i>	HERMOGENES OF TARSUS (<i>floruit</i> 170) <i>Preparatory exercises</i> (?) <i>On issues</i> <i>On invention</i> (?) <i>On ideas</i> (<i>On types of style</i>) <i>On the method of forcefulness</i> (?)

Fig. 2.9 (continued)

3 rd century	DIODEGENES LAERTIUS (ca. 3rd cent.) <i>Lives of eminent philosophers</i> ORIGEN (ca. 185-253) <i>Against Celsus</i> PORPHYRY <i>Introduction</i>	
4 th -6 th century	ANICIUS MANLIUS SEVERINUS BOETHIUS (ca.480-525) <i>Introduction to categorical syllogisms</i> <i>On the hypothetical syllogism</i> JOHN PHILOPONUS (490-570) <i>Commentaries on Aristotle's</i> Prior analytics	

Fig. 2.9 Chronological table of classical authors and works

of the set of instructions that constitutes the classical system of rhetoric moved away from the production and evaluation of argumentative discourse to literary criticism.¹⁴⁶

In the second part of the twentieth century, the interest in the use of classical rhetorical insights in studying argumentation returned, including the uses of such insights for the purposes of *inventio*. This interest is notable in Toulmin’s approach to argumentation, which is discussed in Chap. 4, “Toulmin’s Model of Argumentation” of this volume, and much more explicitly in Perelman and Olbrechts-Tyteca’s *new rhetoric*, discussed in Chap. 5, “The New Rhetoric”, for which the system of classical rhetoric was the major source of inspiration. Much earlier, however, American communication and rhetoric scholars had already put insights from classical rhetoric to good use in their (often case-based) studies of argumentative discourse. Their contributions are discussed in Chap. 8, “Communication Studies and Rhetoric”. In informal logic, exceptionally, Tindale draws attention to the possibilities of using classical rhetoric in the theorizing (see Sect. 7.11).

2.10.3 Classical Works

To close this chapter, we provide a chronological list of the classical authors we discussed or mentioned and their relevant works (Fig. 2.9). For bibliographical information about the translations we quoted from or about the secondary literature we used, see the “References”.

¹⁴⁶ See McKeon (1987), Miller et al. (Eds., 1973), and Murphy (2001) for the development of rhetoric in the Middle Ages; see Mack (Ed., 1994), Mack (2011), Murphy (Ed., 1983), and Seigel (1968) for the development of rhetoric in the Renaissance.

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3.1 Postclassical Contributions to Argumentation Theory

Analytic, dialectic, and rhetoric, as developed in antiquity, still provide an important background to contemporary studies of argumentation. Having discussed the major classical backgrounds of argumentation theory in [Chap. 2, "Classical Backgrounds"](#), in this chapter, we now turn to some historical contributions of a more recent date.

Until the 1950s, the field of argumentation was to a large extent dominated by modern logic. As a result, the study of argumentation was often identified with "doing logic." But this identification was too rash. In [Sect. 3.2](#), we shall, as a preliminary, illustrate the differences between matters of interest from an abstract logical point of view and matters that are of interest for argumentation theorists. Nevertheless, some developments in logic form part of the background of argumentation theory.

In Sects. 2.6 and 2.7, we have, therefore, discussed two chapters of ancient logic. We shall now, in Sect. 3.3, continue our discussion of the logical background with a focus on the crucial concept of *validity* (of arguments). Since this concept has been defined in many different ways, we shall present and discuss not just one but a number of concepts of validity that developed within the (philosophy of) logic and that are relevant for argumentation theory. These will include both formal and nonformal concepts, some of them based on semantic notions (related to various notions of what constitutes a *counterexample*) and others on syntactic or pragmatic notions.

The study of *fallacies*, the stereotypes of unsound argumentation, is another important background to modern argumentation theory. In Sects. 2.4 and 2.8, we discussed Aristotle's important contributions to this study. Over the years, Aristotle's original list of fallacies has been reinterpreted and extended by a great many authors. The most important extension is the addition of the so-called "ad fallacies" – a category of arguments introduced by John Locke. His and other traditional approaches to fallacy theory are discussed in Sect. 3.4. Hamblin (1970), who described the history of the study of fallacies, baptized the treatment of the fallacies generally adopted in the (logical) textbooks of his time *the standard treatment*. This standard treatment of fallacies, which was severely criticized by Hamblin, we shall discuss in Sect. 3.5. Hamblin's criticism and the reactions it provoked from modern fallacy theorists will subsequently be discussed in Sect. 3.6.

In the 1950s, some philosophers gave new impulses to the study of argumentation. None of them envisaged an absolute break with the classical tradition: they rather attempted to create new perspectives. This applies to Stephen Toulmin and to Chaïm Perelman and Lucie Olbrechts-Tyteca, whose approaches will be discussed in Chaps. 4, "Toulmin's Model of Argumentation" and 5, "The New Rhetoric", respectively, but also to Rupert Crawshay-Williams and to Arne Næss. The latter two authors published their works in the 1940s and 1950s. Their contributions to argumentation theory are less familiar than those of Perelman and Toulmin, but by no means less fundamental. Their ideas evolved independently, but reveal on closer inspection a considerable degree of kinship. Both authors are equally concerned with the lucidity of argumentative discussions, and both aim for clarification of the positions taken up in a discussion aimed at resolving a difference of opinion – a clarification to be achieved by a more adequate degree of preciseness of expression.

Næss considers it a precondition for a rational exchange of ideas that the participants in a discussion make clear what exactly is being discussed. Crawshay-Williams opts for a comparable method by emphasizing the need for establishing the exact purpose of the statement that is being discussed. Both allocate a major function to a negotiated agreement about the language usage in discussion because they assume that differences of opinion can only be resolved when the interlocutors can reach an agreement on the criteria that are to be applied in testing the disputed opinion. They consider it part of the task of the argumentation theorist, or someone similarly interested, to suggest possible criteria of this kind.

Though neither Crawshay-Williams nor Næss offers a fully fledged theory of argumentation, both of them have made an original contribution to the development of such a theory. That is why in this chapter, we will discuss a number of salient points from the works of these philosophers. Crawshay-Williams's approach will be treated in [Sect. 3.7](#), Næss's contribution in [Sect. 3.8](#).

Finally, in [Sect. 3.9](#), we shall return to logical validity, not to discuss again the technicalities of its definition but to investigate the reasons for preferring one logical system or principle to another (a problem in the philosophy of logic). In that section, we shall briefly discuss the two concepts of validity (*objective validity* and *intersubjective validity*) that Else Barth, inspired by the ideas of Næss and Crawshay-Williams, put forward, which are as important for the theory of argumentation as for the philosophy of logic. In Barth's view, ultimately, any useful concept of validity must not only be acceptable to its users (intersubjectively valid) but also have proved its mettle as a sensible solution to problems of logic or the use of language (objectively valid).

3.2 Argumentation and Logic

The study of argumentation is, by outsiders, often too easily identified with "doing logic." In order to illustrate some of the differences between the problems argumentation theorists are interested in and those primarily studied in logic, let us take as our point of departure the following dialogue in colloquial speech:

Dale: Mary said she was going to get beef or cod. Do you know what we're eating tonight?

Sally: No, but if she's already done the shopping, it'll be in the fridge.

Dale: Well, she rang me about her essay, and she told me then that she's already done the shopping because she wanted to go on working this afternoon.

Sally: I'll have a quick look in the fridge. It's stacked full. But I can't smell fish, anyway.

Dale: O.K., shall we get some mushrooms to go with the beef?

In this conversation, Dale deduces from what Sally says and does (looking in the refrigerator), and from what Mary told him, that there is beef in the refrigerator. Because Mary has done the shopping and is in the habit of putting the shopping in the refrigerator, Sally and Dale both deduce that the shopping is in the refrigerator. Looking into the refrigerator, Sally does not smell any fish. Both Sally and Dale apparently deduce that there is no fish in the refrigerator. Moreover, Dale concludes that Mary has bought beef because she was going to get beef or cod and has not bought cod. Although Dale does not really state this conclusion, it will be clear to Sally that he has drawn this conclusion. It is presupposed in his question "shall we get some mushrooms to go with the beef?"

Although Dale and Sally reach their conclusions through reasoning, they do not engage in argumentation. Their conclusions are arrived at by way of (implicit) deduction. No standpoint is defended by either of them, neither explicitly nor implicitly. At this point, a first and crucial difference between the primary interests of argumentation theorists and those of contemporary logicians is to be

mentioned. Argumentation theorists study the way in which people take up standpoints and defend these standpoints vis-à-vis their opponents, whereas logicians tend to concentrate on the question whether a conclusion follows from given premises.

Other differences are connected with the present setup of logic as a study of “formal” reasoning patterns. These differences can be illustrated by slightly modifying our example, so that it will involve not just reasoning but argumentation. Let us assume that Dale, in his last turn, concludes the conversation as follows:

Dale: O.K., as I see it, it is beef tonight, since it was either that or cod and there is no fish. Shall we get some mushrooms to go with the beef?

In this modified example, Dale concludes that “it is beef tonight,” and the reasoning is the same as both Dale and Sally used in the unmodified example, but now Dale defends this conclusion as a standpoint vis-à-vis Sally by giving an argument. From the point of view of logic, it makes no difference whether or not a piece of reasoning is used to defend a standpoint vis-à-vis someone else, but from the point of view of argumentation theory, this makes a great difference.

When studying reasoning, modern logicians generally confine themselves to the “logical (in)validity” – and often just the “formal (in)validity” – of arguments, disregarding the actual reasoning processes, their communicative and interactional purposes, and the contextual surroundings in which they take place.¹ Although abstracting from the actual discourse has been highly beneficial to the development of logic, it has been detrimental to the study of argument as envisaged by argumentation theorists. Restricting the study of argument to matters of logical validity – or even just to the formal patterns of reasoning – leads to the exclusion of many important problems of reasoned discourse that are vital to argumentation theorists. Consequently, the study of argumentative discourse as an attempt to justify (or refute) a standpoint before a rational judge (see [Sect. 1.1](#)) cannot be fully dealt with. On the basis of the modified example, it can be shown which methodological abstraction steps are made in formal logic when a logician transforms actual argumentative discourse into a logical reasoning pattern.²

The *first step in the abstraction process* makes the study of argument independent of the situation in which the arguments happen to occur, of the participants involved, and even of people in general. Departing from the literal wording of the conversation or text, a discourse is reconstructed as a set of sentences. Every piece of reasoning or argument is regarded as a context-free and impersonal linking of premises and a conclusion. On the basis of “intuitive” insights, implicit

¹ Concepts of *logical validity* will be discussed in [Sect. 3.3](#). There, it will be seen that there is a variety of such concepts, not all of them “formal.” In this section, however, we shall focus on the logician’s concern with formal validity.

² This exposition of abstraction steps in formal logic is to a large extent based on Nuchelmans (1976, pp. 173–180).

elements (such as missing premises) are made explicit. What remains to be studied is the connection between the opinion expressed in the conclusion and the justifying propositions that are expressed in the premises.³ In the case of Dale's argument, this would result in something like the following:

Argument 1

It was either beef or cod and there is no fish. If there is no fish, we are not going to eat cod. Therefore, it is beef tonight.

Another part of both Dale's and Sally's reasoning can be rendered as follows:

Argument 2

If Mary did the shopping, then they will be in the fridge. Mary did the shopping. Therefore, the shopping is in the refrigerator.

The *second abstraction step* makes the study of argument independent of the actual wording of the premises and the conclusion. It involves presenting the argument in a standard form. Different wordings of the same information are eliminated so that expressional variants of sentences are formulated in a uniform manner. Expressions having a special meaning to logicians (*logical constants*) become more prominent. This concerns, for instance, words that link the sentences to one another such as "or," "and," "if... then," and the word "no(t)," which also appears in the example. To avoid ambiguity of scope, as we shall do here, the logical constant "or" may be written as "either... or," the logical constant "and" as "both... and," and the logical constant "no(t)" as "it is not the case that..." In addition, the indicators *premise* and *conclusion* are added. This produces the following arguments in standard form:

Argument 1

Premise 1: Both either we are going to eat beef or we are going to eat cod and it is not the case that there is fish.

Premise 2: If it is not the case that there is fish, then it is not the case that we are going to eat cod.

Conclusion: We are going to eat beef.

Argument 2

Premise 1: If Mary did the shopping, then the shopping is in the refrigerator.

Premise 2: Mary did the shopping.

Conclusion: The shopping is in the refrigerator.

The *third abstraction step* makes the study of arguments practically independent of being expressed in a particular natural language such as English. In this step,

³This abstraction step is illustrated in definitions of "argument" in logic textbooks. Berger (1977, p. 3) notices that logicians usually define arguments as lists of sentences, one of which is regarded as the conclusion and the rest as the basis for that conclusion. This raises the question *who* is regarding the premises as the basis for the conclusion. Some authors (e.g., Mates 1972, p.5) avoid that problem by omitting from the definition of "argument" any claim or supposition that the premises support the conclusion, so that the question can no longer be asked.

all individual sentences not containing a logical constant (*atomic sentences*) will be abbreviated. Since it is now immaterial how these sentences were worded in English (or any other language), they may be replaced by arbitrary (capital) letters (*A, B, C*, etc.), as long as the same proposition is everywhere represented by the same letter, and different propositions are represented by different letters. The meanings assigned to these letters are given in a “key list,” which could be replaced by a key list in some other language. Logicians call these “abbreviations” *sentential* or *propositional constants*, or *constants* for short. They are *nonlogical constants*.⁴ In our example, this abstraction step would lead to the following notation:

Key List

B: We are going to eat beef.

C: We are going to eat cod.

F: There is fish.

S: Mary did the shopping.

R: The shopping is in the refrigerator.

Argument 1

Premise 1: Both either *B* or *C* and not *F*

Premise 2: If not *F*, then not *C*

Conclusion: *B*

Argument 2

Premise 1: If *S*, then *R*

Premise 2: *S*

Conclusion: *R*

In the *fourth abstraction step*, the study of argument is made fully independent from the formulations of logical constants in natural language. The logical constants, which up till now were expressed in English, are in this step replaced by special symbols of a logical language. These symbols have a standardized and technically specified meaning. The last reminders of ordinary language in our example are thus removed. The meanings of the logical constants of the logical language we are using here are laid down in *propositional logic*, the kind of logic that deals with logical constants of this type.⁵ In the language of propositional logic, the logical constants we used are symbolized as \vee (“either ... or”), \wedge (“both ... and”), \rightarrow (“if ... then”), and \neg (“not”).⁶ Using the symbol “ \therefore ” to indicate the conclusion, the arguments in our example can be translated in the following way:

⁴That the nonlogical constants we use are sentential (propositional) constants is because the examples we have chosen are suitable to be studied in sentential (propositional) logic. For other kinds of logic, different types of nonlogical constants are used.

⁵There are several kinds of propositional logic, and in different systems of propositional logic, the meaning of the constants may be different. For the roots of propositional logic in Stoic logic, see Sect. 2.7 of this volume.

⁶Other (systems of) symbols for these logical constants are also current. See Bonevac (1987, p. 43).

Argument 1

$$(B \vee C) \wedge \neg F$$

$$\neg F \rightarrow \neg C$$

$$\therefore B$$
Argument 2

$$S \rightarrow R$$

$$S$$

$$\therefore R$$

The logical constants appearing in these examples are \vee (*disjunction*), \wedge (*conjunction*), \rightarrow (*conditional*), and \neg (*negation*). The meanings of these logical constants are much more sharply defined than those of their counterparts in ordinary language. The definitions of logical constants may proceed in various ways, but we shall here discuss only the “classical semantic approach,” in which the meanings of the logical constants are related to the concept of *truth-value*.⁷

Starting from a binary concept of truth-value, sentences like “We are going to eat beef” must be either true or false (and not both). A sentence constant “A” therefore has two possible truth-values: “true” and “false.” Two occurrences of sentence constants can be connected to each other with the help of logical constants such as \vee (“or”) and \rightarrow (“if . . . then”); also a single sentence constant can be preceded by the logical constant \neg (“not”). All these cases and the repetitions and combinations of them result in new, compound sentences whose truth-value is determined by the truth-values of their component sentences and the choice of logical constants used in linking them.

The meanings of the logical constants of this type, i.e., the ways they influence the truth-value of the sentence (or “proposition”) in which they occur, are in classical propositional logic laid down in elementary “truth tables,” one for each logical constant. An elementary truth table specifies the truth-value of a compound sentence in terms of the truth-values of its immediate components. For instance, the compound sentence $A \vee B$ has the truth-value *true* when A or B (or both) have the truth-value *true*, and otherwise the truth-value *false*. Similarly, the truth-value of the compound sentence $\neg B$ (“We are not going to eat beef”) is *false* if the sentence B (“We are going to eat beef”) is true, and *true* if the sentence B is false.

Translating expressions such as “either . . . or” and “if . . . then” into the language of propositional logic involves an abstraction from various aspects of the ordinary meaning of these words. In the definition of the “formal” logical constant \rightarrow , for instance, all sorts of information is ignored that the use of the wording “if . . . then” normally provides. The meaning of the formal logical constant is confined to those aspects of “if . . . then,” which are relevant to the possible truth-values of sentences composed with its help. As a consequence, the translation of “if . . . then” by \rightarrow in sentences like “If this man jumps from a tower, then he will fall to his death”

⁷There are also nonclassical semantic means, as well as syntactic (derivational) and pragmatic (dialogical) ways, to determine the meaning of logical constants (see [Sect. 3.3](#)).

inevitably leads to a reduction in meaning. It is, for instance, left out of the account that there is a *causal* relation between the fall and the death.

Though this may not be immediately apparent due to the abbreviation of the sentences by sentence constants, even after the fourth abstraction, the arguments that are dealt with continue to be specific arguments about a specific topic. Because it is not the logicians' intention to deal with arguments by examining them all separately, a further abstraction step is taken, which is crucial to logical theory.

In the *fifth abstraction step*, the study of argument is made independent of the propositional contents of premises and conclusion. Specific arguments about a specific topic are viewed as instances or instantiations of *argument forms* consisting of a constellation of *sentence forms* (which are still designated as premises and conclusion). The focus of attention is in logic on the argument forms rather than the individual arguments. In the notation of these argument forms, the letters *A*, *B*, *C*, etc. no longer stand for specific sentences or propositions as given in a key list, but are used as *variables* for which declarative sentences of any kind may be substituted.⁸ Because they are not sentences, the variables do not have any truth-value; they only become true or false if sentences are assigned to them by a key list (or if truth-values are assigned to them by an "interpretation function," which may be done ad libitum). This focus on argument forms means that individual arguments are treated as "substitution instances" (fillings) of certain abstract reasoning patterns ("argument forms").

As soon as these five steps of abstraction are taken, logicians can set out to fulfill their general aim of distinguishing between *valid* and *invalid* argument forms (and hence, indirectly, between formally valid and formally invalid arguments which are substitution instances of these argument forms). An argument form is valid (in propositional logic) if and only if none of its substitution instances constitutes a *substitutional counterexample* to it, i.e., if and only if none of these substitution instances is an argument with true premises and a false conclusion.⁹ All (and only) substitution instances of a valid argument form are formally valid arguments.¹⁰

To test the validity of an argument, logicians determine whether the argument concerned is a substitution instance of a valid argument form. One method used in this endeavor amounts to a systematic search for a counterexample that will

⁸ One may prefer to use distinct letters (such as *p* and *q*) as variables to keep them apart from constants, but that is not necessary as long as it is, at each occasion, clear how the letters are used. In our example, it suffices to retract the key list given earlier.

⁹ For different kinds of counterexample in connection with logical validity, see Sect. 3.3.

¹⁰ Thus, if an argument is valid in propositional logic, it is impossible that its conclusion be false whereas its premises are true. It is important to realize that this does not mean that the premises are required to be true. A valid argument may very well have false premises. Valid arguments that do have true premises are sometimes called "sound," but generally the soundness of arguments is no concern of logicians. On the other hand, logicians study many other types of validity besides those relating to propositional logic. If an argument is not valid in propositional logic, it may still be valid in some other logic, such as predicate logic; see below.

disprove the validity of an “optimal argument form” of the given argument.¹¹ If a substitution instance of this form is found with true premises and a false conclusion, then not only the argument form but also the argument itself is invalid (in propositional logic). On the other hand, if no such substitution instance is found, and the search was truly systematic and complete, then both the form and the argument are valid. Methods that are systematic and complete for classical propositional logic are, for instance, the *method of truth tables*, based on analysis by means of the elementary truth tables for logical constants discussed above (Wittgenstein 1922), and the *method of semantic tableaux*, also known as “Beth tableaux” (Beth 1955), which is directly based on the search for a counterexample.

The arguments we have used as our examples are substitution instances of argument forms in which the logical constants \vee (*disjunction*), \wedge (*conjunction*), \rightarrow (*conditional*), and \neg (*negation*) are used. In propositional logic, where the validity of argument forms employing this type of logical constants is examined, it is demonstrated that they are formally valid. The valid argument form of argument 2 is called *modus ponens* and was already known by the Stoics (see Sect. 2.7.4).

In order to examine the validity of argument forms employing other types of logical constants than the ones we discussed, logical theories that go beyond propositional logic are required. Arguments whose validity cannot be established in propositional logic may prove to be valid in other logics. One such logic is *predicate logic*, which deals with the use in arguments of logical constants known as “quantifiers” such as “for every” and “for at least one.” Among other logics that have so far been developed are *modal* logics, examining the logical behavior of logical constants such as the words “necessarily” and “possibly”; *deontic* logic, concentrating on logical constants such as “it is obligatory that” and “it is permissible that”; *epistemic* logic, studying the logical behavior of logical constants like “it is known that” and “it is believed that”; and *tense* logic, investigating the logical effect of temporal references.

This brief account of the various ways in which logicians abstract from argumentative reality in order to pursue their general aim of distinguishing between valid and invalid argument forms should suffice to illustrate the difference with the kinds of problems argumentation theorists are interested in. It shows how logicians, rather than studying argumentation as it naturally occurs in everyday discourse, concentrate on abstract reasoning patterns formally structured by logical constants. In this endeavor, a great many verbal, contextual, situational, and other pragmatic factors that play a part in communication and interaction processes are not taken into account, so that the problems of

¹¹ An optimal argument form of a given argument is found by a careful and thoroughgoing logical analysis. In propositional logic, each sentential variable used should correspond to exactly one atomic sentence and each atomic sentence to exactly one sentential variable (no logical constant should be missed).

argumentative discourse cannot be adequately dealt with. The study of argumentation ought to contain more than the study of the canonical subject matter of logic has to offer.

For the sake of clarity, it should be added that in drawing this conclusion we neither say that the study of argumentation can do without any logic at all, nor that exchanges between logicians and argumentation theorists would be unfruitful. There are logicians of various types, one being more inclined than the other to obey the call of argumentative practice. At any rate, there has already been a tendency among logicians toward broadening their interests in phenomena of argumentative discourse, which have escaped their attention for too long. At the same time, various argumentation theorists attempt to include, in some form or other, relevant aspects of logic in their theories. For the time being, in view of the many complexities involved in studying argumentative discourse, it seems best to aspire to a sensible division of labor and to regard the study of argumentation as a discipline in its own right, nourished by the combined efforts of philosophers, logicians, linguists, (speech) communication specialists, psychologists, lawyers, and others.

3.3 Concepts of Logical Validity

The various concepts of *logical validity* (also *deductive validity* or simply *validity*)¹² are of interest for the theory of argumentation in three ways. First, though argumentation theory is by no means restricted to the study of deductive arguments, the latter certainly form part of its subject matter, so that the notion or notions of validity pertaining to such arguments should be taken into account. Second, logical ideas about forms or schemata, about the structure of derivations, and about interpersonal argument are closely related to similar notions that are prominent in argumentation theory: argument schemes, argumentation structures, and discussion models. Third, since logic was for centuries the main discipline devoted to the study of arguments, the ideas developed in that discipline about which arguments are good arguments will be of interest for present-day students of arguments.

The kinds of validity distinguished in logic can be divided into *semantic*, *syntactic*, and *pragmatic* concepts.¹³ Characteristic of semantic concepts of validity is that they are concerned with truth and that they can be formulated in terms of the

¹² The term *logic* in this section will be confined to deductive logic. Deductive logic is concerned with the analysis and evaluation of deductive arguments: arguments which are claimed, or supposed, to be deductively valid (in fact, this can be any argument). The possible meanings of this validity claim, as developed in the history of modern logic, are the subject of this section.

¹³ Sometimes the term *semantic* is used in a much broader sense, covering also the syntactic and pragmatic concepts of validity (because such systems, in a sense, give a meaning to logical constants).

notion of “counterexample.” In the preceding section, we briefly discussed an example: the semantic concept of formal validity in classical propositional logic. According to such concepts, the validity of arguments (in the restricted sense of constellations consisting of premises and a conclusion¹⁴) is based on the impossibility of finding counterexamples. Syntactic notions, on the other hand, define the validity of an argument in terms of the availability of proper ways to stepwise deduce its conclusion, whereas pragmatic notions define validity in terms of the availability of means to defend the conclusion against doubts or challenges.

Semantic notions of validity come in two kinds. Some of them rest on the notion of *necessitation*: an argument is valid if the premises necessitate the conclusion in the sense that it is impossible for the premises to be true without the conclusion being true – in other words, when no possible situation could count as a counterexample. These notions may differ in their interpretation of “impossible.” Other semantic notions, such as the one discussed in the preceding section, are *formal* in the sense that they rest on semantic features of argument forms or schemas: an argument is *formally valid* if and only if it instantiates a *valid schema* (a valid argument form), and a schema is valid if and only if it does not admit a counterexample.¹⁵ In the case of argument forms or schemas, a counterexample is not a possible situation but an instantiation of a schema such that the premises come out true and the conclusion comes out false.

An argument is *derivationally valid* (according to some specific syntactic concept of validity) if its conclusion can be derived from its premises by means of a specific set of rules of derivation (such as *modus ponens* and *modus tollens*). It is *dialogically valid* (according to some specific pragmatic concept of validity) if there is, in the context of a specific system of discussion rules, a winning strategy for the proponent of the conclusion vis-à-vis any opponent admitting the premises.

The various notions mentioned here will be discussed in more detail in this volume: the semantic and derivational notions in this section and the dialogical notion in [Sects. 6.2 and 6.5.12](#).

3.3.1 Semantic Validity in Logic Textbooks

Textbooks of elementary logic of the twentieth century usually start from a necessitation conception of validity (which is the easiest to grasp), but then soon turn to the formal notion and devote most of their explanations to techniques of analysis

¹⁴ The term *argument* will in this section be used in this restricted sense.

¹⁵ “Admitting no counterexample” can be taken to mean either that there *is* no counterexample or that there *cannot be* a counterexample. However, for the kinds of argument forms pertaining to logics that are commonly used, the two phrases amount to the same (if there can be a counterexample, there is one), in particular if mathematical structures are allowed to provide counterexamples.

and evaluation connected with the latter notion. Thus, Irving Copi (1961) first introduces the necessitation concept of validity as follows:

A deductive argument is *valid* when its premisses, if true, do provide conclusive evidence for its conclusion, that is, when the premisses and conclusion are so related that it is absolutely impossible for the premisses to be true unless the conclusion is true also. (pp. 8–9)

Later on, he introduces the “method of *refutation by logical analogy*” (p. 253) to establish the invalidity of arguments. This method is based on a formal conception of validity:

To prove the invalidity of any argument it suffices to formulate another argument which: (a) has the same form as the first, and (b) has true premisses and a false conclusion. This method is based upon the fact that validity and invalidity are purely *formal* characteristics of arguments. ... (Copi 1961, p. 254, original emphases in these quotes)¹⁶

It is, however, not obvious that necessitation as a feature of arguments is a “purely formal characteristic.” Benson Mates (1972), who seems to be aware of this, introduces the necessitation concept as follows (he speaks of “sound” arguments instead of “valid” ones):

... an argument is sound if and only if it is not possible for its premisses to be true and its conclusion false [...]. Another way of stating the same criterion is this: an argument is sound if and only if every conceivable circumstance that would make the premisses true would also make the conclusion true. (p. 5)

But when he comes to discuss logical forms (argument forms), Mates remarks that one can make a “division of sound arguments into those that are sound by virtue of their logical form and those that are obtainable from such arguments by putting synonyms for synonyms” (p. 15). For instance, the argument “Smith is a man that is not married, therefore Smith is not married” is valid by virtue of its logical form (“ x is an A that is not B , therefore x is not B ”). Putting the synonym “bachelor” for “man that is not married,” we get the argument “Smith is a bachelor, therefore Smith is not married,” which is valid, but not by virtue of its logical form (“ x is a C , therefore x is not B ”) (cf. Mates, *ibid.*).

Thus, according to Mates, formally valid arguments form a subclass of those arguments that are valid according to the necessitation concept of validity (the “sound” arguments). Those arguments that can be obtained from formally valid arguments by putting synonyms for synonyms are generally not formally valid, but still valid according to the necessitation concept. It is, however, not obvious that all valid arguments that are not formally valid are obtainable by putting synonyms for synonyms in formally valid arguments, as Mates seems to imply.

¹⁶ On the pages that follow, Copi refines his description of the method of refutation by logical analogy.

3.3.2 Roots of the Two Semantic Conceptions

Whence did the textbooks inherit the necessitation conception and the formal conception of validity? Both have their roots in Aristotle. As we saw in [Sect. 2.3.1](#), Aristotle defined valid deductive argument as follows:

Now a deduction is an argument in which, certain things being laid down, something other than these necessarily comes about through them. (Aristotle 1984, vol. 1, *Topics* I.1, 100a25–27)

It thus seems that valid deductive arguments must at least fulfill the necessitation condition (“necessarily”), besides some other conditions (plurality and nonredundancy of premises, noncircularity).

Aristotle’s use of a formal concept of validity remains implicit, but is quite obvious from his discussion of the syllogistic figures and in particular his use of counterexamples when applying the method of contrasting instances (see [Sect. 2.6](#)). The validity of arguments in such cases as Aristotle studied in his syllogistic can in hindsight be seen to depend on the form of the argument and not on its matter (the terms). Steps in the direction of making this formal view on validity explicit were already taken by ancient commentators, especially Alexander of Aphrodisias (*floruit* AD 200), who distinguished form and matter, as well as later by Peter Abelard (1079–1142), whose *perfect inferences* were characterized as invariant under substitution of terms for terms. Besides other views, the formal view became more prominent in the fourteenth-century treatises on the theory of consequence (Dutilh Novaes 2012).

In the fourteenth century, the concepts that underlie our present ideas about semantic validity were widely discussed by authors of different schools. By way of example, we shall briefly report the classification of *consequentiae*, that is, of (valid) arguments (or their associated conditionals¹⁷), given by an author referred to as “the Pseudo-Scot” or “Pseudo-Scotus.”¹⁸ According to Kneale and Kneale (1962), his account is “the clearest account of the matter available in any medieval author” (p. 278). Valid arguments, according to Pseudo-Scotus, are either *formally valid* (*consequentia formalis*) or *materially valid* (*consequentia materialis*). The first type of valid argument will remain valid if terms are replaced by other terms, as long as we do not change the form of the argument and the way the terms are distributed. To the form belong the *logical constants* (syncategoremata), such as “and,” “or,” “not,” and “every”; the copula “is”; and the number of premises. The formally valid arguments are subdivided according to whether their premises are categorical or hypothetical and then further into various moods.

¹⁷ The associated conditional of an argument is the conditional proposition whose antecedent is a conjunction composed of all the argument’s premises and whose consequent is equal to the argument’s conclusion.

¹⁸ The account here given of a passage in Pseudo-Scotus’s “Questions on Aristotle’s *Prior Analytics*: Question X” (see Pseudo-Scotus 2001) is based on its quotation and discussion by Kneale and Kneale (1962, pp. 278ff). See also Dutilh Novaes (2012, pp. 22–23).

Materially valid arguments are those valid arguments that are not formally valid. They are subdivided into those that are *simply valid* (*consequentia materialis bona simpliciter*) and those that are *valid as for now* (*consequentia materialis bona ut nunc*). The difference between those two lies in the status of the missing premise by which they can be reduced to a formally valid argument: in the first case, this must be a necessary truth, in the second case a contingent truth. An example of a simply valid argument is “Some human being is running, therefore some animal is running.” The premise that needed to be added to get a formally valid argument is the sentence “All humans are animals,” which holds by virtue of the meanings of “human being” and “animal.” Clearly then, simply valid arguments are (materially) valid by virtue of the meanings of their terms and thus seen to conform to the necessitation concept of validity. Consequently, there is not really a missing premise in these cases. But this does not hold for the arguments that are merely valid as for now. An example of such an argument is “Socrates is running. Therefore, something white is running,” supposing that Socrates is white. These arguments have a truly missing premise and do not satisfy the necessitation concept, since the premises could be true and the conclusion false, only not in the present circumstances.

3.3.3 Bolzano’s Generalization of Formal Validity

In the nineteenth century, the theologian, philosopher, mathematician, and logician Bernard Bolzano (1781–1848) considerably refined and generalized the notion of formal validity of the fourteenth-century logicians.¹⁹ One respect in which Bolzano’s approach to logic differed from that of his medieval predecessors concerns the concept of *proposition*. For the earlier logicians, a proposition was mostly a declarative sentence (*propositio*), that is, a sentence expressing some (objective) thought, but for Bolzano, a proposition is just this thought, the propositional content, whether or not it has been expressed by a declarative sentence or been thought of in someone’s mind. Bolzano precedes Gottlob Frege (1848–1925) in sharply distinguishing between what philosophers nowadays usually call a *proposition* (*Satz an sich*, proposition in itself; Frege: *Gedanke*, thought) and a *sentence* (*ausgedrückter Satz*, proposition which is expressed in words; Frege: *Satz*, sentence) or a *subjective thought* (*gedachter Satz*, mental proposition; Frege: *Vorstellung*, idea) of which a proposition can be the content (Bolzano 1837, 1972, §19).

However, in one respect, Bolzano’s propositions are very much like sentences: they are both composed of parts. The *ideas in themselves* (*Vorstellungen an sich*) out of which propositions are composed correspond pretty much to the constituents

¹⁹ This is not to say that he had been to any major extent influenced by them. According to Kneale and Kneale (1962), “he seems to have known little of the achievements of medieval logicians” (p. 359).

of the sentences by which these propositions are expressed (Bolzano 1837, 1972, §48).²⁰ Thus, it is possible to think of some ideas as replaceable by other ideas yielding a different proposition, just as the medieval logicians thought of terms in a sentence as replaceable by other terms yielding a different sentence. This opens the way to a reformulation of the concept of formal validity on the level of propositions in Bolzano's sense.

The arguments Bolzano considers consist of propositions that are premises (A, B, C, D, \dots) and propositions that are conclusions (M, N, O, \dots). He then defines a relation of *deducibility* (*Ableitbarkeit*)²¹ between the premises and the conclusion, such that, if this relation holds, we would say that the different arguments with premises A, B, C, D, \dots and one proposition selected from M, N, O, \dots as its conclusion are all formally valid (in some sense). Typical for Bolzano is that deducibility is defined relative to a selection of ideas (i, j, \dots) that are thought of as replaceable parts occurring in one or more propositions of the argument.²² The other ideas remain fixed. *Deducibility* is then defined as follows:

I say that propositions M, N, O, \dots are *deducible* from propositions A, B, C, D, \dots with respect to variable parts i, j, \dots , if every class of ideas whose substitution for i, j, \dots makes all of A, B, C, D, \dots true, also makes all of M, N, O, \dots true. Occasionally, since it is customary, I shall say that propositions M, N, O, \dots *follow*, or can be *inferred* or *derived*, from A, B, C, D, \dots (Bolzano 1972, §155 (2), p. 209)

Let us give some examples. Let the premises be “No human being is an angel” and “Every psychiatrist is a human being,” and let the conclusions be “No psychiatrist is an angel” and “No angel is a psychiatrist.” If we now set the variable parts to be the ideas “human being,” “angel,” and “psychiatrist,” then with respect to these parts, the conclusions will be deducible (in the sense provided by Bolzano) from the premises. The same fact can be expressed by saying that the arguments “No human being is an angel and every psychiatrist is a human being, therefore no psychiatrist is an angel” and “No human being is an angel and every psychiatrist is a human being, therefore no angel is a psychiatrist” are both formally valid. And this is so because they are substitution instances of valid schemas, namely, “No H is an A and every P is an H , therefore no P is an A ” and “No H is an A and every P is an H , therefore no A is a P ,” respectively. This example may suffice to show that the Aristotelian syllogisms make up part of the cases of deducibility as conceived by Bolzano.

It is not the case, however, that formal validity and Bolzano's deducibility come down to the same thing for all arguments. If the only premise is “Socrates is a

²⁰ Instead of writing *Vorstellung an sich* (idea in itself), Bolzano usually simply writes *Vorstellung* (idea). Bolzano's concept *idea* (*in itself*) is very different from Frege's concept *idea*, which refers to mental entities.

²¹ The choice of the term *Ableitbarkeit* (deducibility) for this relation is somewhat infelicitous, since the relation is a semantic one and does not involve the syntactic notion of deduction.

²² On the linguistic level, these ideas may correspond to the usual nonlogical terms, such as the terms of a syllogism, but they may also correspond to other constituents.

human being” and the only conclusion “Socrates is an animal,” then with respect to “Socrates” as the only variable idea, the conclusion will be deducible (in Bolzano’s sense) from the premise. With respect to “Socrates” and “animal” as the variable ideas, however, the conclusion will no longer be deducible (in that sense) from the premise. Though this argument (“Socrates is a human being, therefore Socrates is an animal”) is certainly valid under the necessitation conception of validity, it is not formally valid, since the schema “ x is an H , therefore x is an A ” is invalid as shown by the counterexample “Socrates is a human being, therefore Socrates is a fish.”

Bolzano’s treatment of the formal concept of validity is perhaps the greatest advance in this area after the Middle Ages. The care with which Bolzano defines his concepts and develops his theory is remarkable, especially when one considers that it precedes the age of logical formalization. Bolzano’s introduction of the selection of a set of variable ideas certainly enriches the possibilities of defining concepts of deducibility or validity, though not every selection will lead to equally interesting results. Some selections yield logics that were extant in Bolzano’s time (such as syllogistic logic) or were developed later (predicate logic); others may yield interesting logics for special areas by keeping certain ideas fixed as if they were logical constants.

3.3.4 Three Senses of Counterexample

Above, we saw that the two semantic conceptions of validity (the necessitation conception and the formal conception) each had its own corresponding notion of what constitutes a counterexample. Though both semantic concepts share the idea that validity is somehow based on the absence of a counterexample, each of them gives a different twist to this idea.

In the case of the necessitation concept of validity, there is no such thing as substitution of terms for terms. When looking for a counterexample, one does not effect changes in either the premises or the conclusion. Rather, leaving the argument unchanged, one imagines various situations (or *possible worlds*) to which its premises and the conclusion could refer. One of these situations is the actual situation. If, in the actual situation, the premises are true and the conclusion is false, actuality constitutes a *situational counterexample* and the argument is invalid. Otherwise, one may look for a counterexample among non-actual but possible situations. If there is one such situation in which the premises are true and the conclusion false, this also constitutes a situational counterexample, and the argument will again be invalid. Presenting situational counterexamples to one’s opponent’s arguments is an important strategy of real-life argumentation (Krabbe 1996).

It might be helpful to illustrate this notion with an example. “John is 30 years old today, therefore he will be 31 years old a year from now” is invalid, even if the premise and the conclusion are actually true—because it may be objected that in some possible situation John would have died before the year had passed. On the other hand “John is 30 years today, therefore he was 29 years old a year ago” is

valid (but not formally valid) because there is no possible situation that would constitute a situational counterexample.

In the case of the formal conception of validity, one does not look for different situations. Only the actual world counts. The idea is to investigate arguments displaying the same argument form as a given argument to see whether one of them could count as a counterexample against this form, i.e., has actually true premises and a false conclusion. Presenting such counterexamples to one's opponent's arguments is also an important strategy of real-life argumentation (Woods and Hudak 1989).

But how can one find the argument form of an argument? Logicians after Bolzano have not chosen to adopt his method of making the notion of formal validity relative to a choice of variable constituents in the propositions making up the argument. Rather, they make it relative to a choice of logical theory (e.g., syllogistic logic, propositional logic, predicate logic)²³ that is to provide a method of analysis for finding an optimal argument form (relative to that theory).²⁴ To show that an argument is formally valid in terms of some logical theory, one must present an argument form (schema) that is valid in that theory, of which the argument is an instantiation (a substitution instance). To show the formal invalidity of an argument, according to the theory, one must show that no such valid argument form exists. For this, it suffices to show that an optimal argument form of the argument is invalid according to the theory.

Thus, the issue of the validity of arguments shifts to the validity of their argument forms. It is at this level that the notion of a counterexample is applied: an argument form is valid if and only if it admits no counterexample. Clearly in this context, the notion of counterexample is different from that of a situational counterexample. It can be specified in two distinct ways: as a *substitutional counterexample* or as an *interpretational counterexample* (a *counterinterpretation* or *countermodel*). The first way is the one we briefly mentioned above: a substitutional counterexample against an argument form (schema) is an argument that is an instantiation of that form such that the premises of the argument are true, whereas its conclusion is false. The second way is the one of contemporary model-theoretical semantics, a branch of logic that received its main impulse from Alfred Tarski (1901–1983). Though the premises and the conclusion of an argument form do not possess truth-values – they contain schematic letters as constituents which do not have a specific linguistic meaning – they will get a truth-value as soon as meanings (or the relevant parts of meanings) have been assigned to them by stipulation. An assignment of (appropriate) meanings to schematic letters is called an *interpretation function* or simply an *interpretation* or a *model*. An interpretation of an argument form that makes every premise true and the

²³ About the ins and outs of choosing a logical theory, see Sect. 3.9.

²⁴ The notion of an optimal argument form depends on the selected theory. In Sect. 3.2, this notion was explained with respect to propositional logic.

conclusion false is an interpretational counterexample or countermodel against that form.²⁵

Again, an example might be helpful. Above, we showed the invalidity (relative to predicate logic) of the form “ x is an H , therefore x is an A ” by the substitutional counterexample “Socrates is a human being, therefore Socrates is a fish.” A corresponding interpretational counterexample would be an interpretation function I that assigns Socrates to x , the set of all human beings to H , and the set of all fish to A . A common notation for this is $I(x) = \text{Socrates}$, $I(H) = \{x | x \text{ is a human being}\}$, and $I(A) = \{x | x \text{ is a fish}\}$.

It is clear that any substitutional counterexample can be rewritten as an interpretational counterexample, since any given substitutional instance provides us, for each variable, with the entity that the interpretation must assign to that variable. In the example given above, it is clear from the substitutional counterexample “Socrates is a human being, therefore Socrates is a fish” that, in the corresponding interpretational counterexample, Socrates must be assigned to x . The reverse is not always obvious because it is at least conceivable that some interpretational counterexample assigns entities to some variables for which there exist no words or descriptions in the language in which the substitutional counterexample must be formulated.²⁶ Anyhow, any argument that is formally valid according to the interpretational method will be formally valid according to the substitutional method and for many logical languages the reverse will hold as well.

It may also be clear that any situational counterexample against an argument must have structural features that can be mirrored by a structure in the realm of actual entities (including mathematical entities) and thus yield an interpretational counterexample to the form of that argument (no matter which acceptable logical theory is used to determine the form). For instance, let the argument be “Some swans are black, therefore some swans are white.” The possible situation in which there are precisely two black swans, one black raven, and two white gulls constitutes a situational counterexample: in this situation, the premise is true and the conclusion is false. Using syllogistic logic, the form of the argument is “Some S are B , therefore some S are W .” We must show that this form is invalid by mirroring the structure of the imaginary counterexample by entities in the real world, that is, we must find interpretations of S , B , and W so that the set of two S -things is included in the set of three B -things and the latter set disjunct from the set of

²⁵ In the truth table method, the schematic letters are propositional variables, and the only relevant part of the meaning of a sentence is its truth-value (*true* or *false*). An interpretation or model is then an assignment of truth-values to the propositional variables.

²⁶ For first-order languages, it is known that if there is any counterexample, there is always one that can be expressed in the language of elementary arithmetic and therefore yields a substitutional counterexample, so that both methods are equivalent (Quine 1970, pp. 53–55). See also Tarski (2002).

two W-things. Such an interpretation can easily be found (e.g., $I(S) = \{1, 2\}$, $I(B) = \{1, 2, 3\}$, $I(W) = \{4, 5\}$ ²⁷).

Hence, any argument that is formally valid (according to some acceptable logical theory) must also be *situationally valid*, that is, its premises must necessitate the conclusion. When we discussed examples such as “Smith is a bachelor, therefore Smith is not married” or “Socrates is a human being, therefore Socrates is an animal,” we already saw that the reverse does not hold.

3.3.5 Syntactic Concepts of Validity

Syntactic as well as pragmatic concepts of validity do not involve the notion of truth, but concentrate on the means for deducing or defending the conclusion of an argument on the basis of its premises. Pragmatic concepts are based on regulated systems of dialogue (formal dialectical systems) in which one party (the Proponent) tries to let the other party (the Opponent) accept a thesis. The Opponent tries to avoid this. An argument is then said to be *dialogically valid* (relative to such a system of dialogue) if there is a winning strategy for the Proponent of the argument’s conclusion vis-à-vis any Opponent who initially admits the argument’s premises. Since formal dialectical systems are treated extensively in [Chap. 6, “Formal Dialectical Approaches”](#), we refer the reader to that chapter, especially [Sects. 6.2 and 6.5.12](#).

Syntactic concepts are also based on regulated systems, but these are monological rather than dialogical: they consist of precise rules to derive conclusions from premises in a step-by-step manner. Given such a derivational system, an argument is said to be *derivationally valid* (relative to the system) if its conclusion can be derived from its premises by the rules of the system.

Frege developed a derivational system for the express purpose to show that arithmetic is reducible to logic (logicism). To achieve the logicistic ideal, it was necessary to show that all arithmetic concepts can be defined in terms of logical concepts and that all arithmetic truths can be derived from logical truths. For this, it suffices to define the primitive concepts of arithmetic in logical terms and to derive the axioms of arithmetic from logical axioms. These derivations could not proceed in the way of informal mathematics, taking only intuitively acceptable steps, because such steps could hide very well some arithmetic assumptions, whereas the derivation should be based on logic only. Therefore, Frege developed a *logical axiom system* (i.e., a system with a number of logical axioms and very few and simple rules of derivation) that made it possible to have proofs without gaps (Frege 1879), i.e., proofs in which no intermediate steps are left out, but each step is justified by a logical rule of derivation of the system.

²⁷ Here, “{1,2}” stands for the set with precisely the numbers 1 and 2 as elements (members) {1, 2, 3} for the set with precisely the numbers 1, 2, and 3 as elements, and so on.

Logical axiom systems however do not correspond very well with the ways people actually reason, even when they reason deductively. This is so because many deductions contain hypothetical parts in which the reasoner assumes some statement as a hypothesis in order to investigate which are its consequences. A hypothetical part of reasoning depends upon its hypothesis. At a certain point, however, the hypothesis is withdrawn, but at that point some other proposition counts as established, which no longer depends on the hypothesis. For instance, in a *reductio ad absurdum* reasoning, in order to refute some proposition P , one assumes P as a hypothesis and then derives an absurdity from it. As soon as an absurdity is reached, the hypothesis is withdrawn and the contradictory of P counts as established (possibly relative to other hypotheses that have not yet been withdrawn). Logical axiom systems lack the means to directly mirror such procedures of reasoning.

Hypothetical reasoning, however, is part and parcel of so-called systems of natural deduction. Consequently, these systems are much closer to actual reasoning, which is often hypothetical, and therefore of greater interest for the study of argumentation. The structures that derivations display in these systems are easily seen to be analogous to the argumentation structures of argumentation theory, especially when the latter incorporate hypothetical reasoning (e.g., Fisher 1988). Systems of natural deduction were introduced in 1934 by Gerhard Gentzen (1909–1945) (Gentzen 1934) and, independently, by Stanisław Jaśkowski (1906–1965) (Jaśkowski 1934).

To conclude this section, we give two examples of deductions that are amenable to being analyzed in systems of natural deduction. Rather than a full system, we first introduce just some rules of derivation (most of them taken from Gentzen or Jaśkowski). In each example, we shall first present the deduction informally and after that two formal versions of it, one being in Gentzen's style and one in Jaśkowski's style of natural deduction.

The rules we shall use are the following²⁸:

(MP) The rule of *modus ponens*: from a conditional proposition “If P , then Q ” and its antecedent P , we may derive its consequent Q .

(DS) The disjunctive syllogism: from a disjunction “Either P or Q ” and the negation of one of its disjuncts not- P (or not- Q), we may derive the other disjunct Q (respectively P).

(Con) The conjunction rule: from the propositions P and Q , we may derive their conjunction “Both P and Q .”

(Sep) The separation rule: from a conjunctive proposition “Both P and Q ,” we may derive P and we may derive Q .

Thus far, the rules did not refer to hypothetical derivations as do the following two, more complex, rules:

²⁸ The rules of derivation here presented are introduced for illustrative purposes. To our knowledge, they do not constitute any extant system of natural deduction, though each of them occurs in some such systems. For further instruction on extant systems of natural deduction, we refer the reader to textbooks of logic.

Fig. 3.1 First example of a Jaškowski-style natural deduction

1. $(B \vee C) \wedge \neg F$	(premise)
2. $\neg F \rightarrow \neg C$	(premise)
3. $\neg F$	(from 1 by Sep)
4. $\neg C$	(from 2 and 3 by MP)
5. $B \vee C$	(from 1 by Sep)
6. B	(from 5 and 4 by DS)

		$(B \vee C) \wedge \neg F$ (premise)
		————— Sep
$(B \vee C) \wedge \neg F$ (premise)	$\neg F \rightarrow \neg C$ (premise)	$\neg F$
————— Sep		————— MP
$B \vee C$		$\neg C$
		————— DS
	B	

Fig. 3.2 First example of a Gentzen-style natural deduction

(CP) The rule of conditional proof: if from the hypothesis P we have completed a derivation of the conclusion Q , we may withdraw the hypothesis and posit the conditional proposition “If P , then Q ,” which then will be independent of the hypothesis P .²⁹

(RAA) The classical rule of reduction ad absurdum: if from the hypothesis not- P we have completed a derivation of an explicit contradiction (“Both Q and not- Q ” or “Both not- Q and Q ”), we may withdraw the hypothesis and posit the proposition P , which then will be independent of the hypothesis not- P .

Our first example of a deduction is Dale’s argument of Sect. 3.2 (“argument 1”). The premises state that (1) both we are going to eat beef or cod and there is no fish and (2) that if there is no fish, then we are not going to eat cod. From (1), it follows that there is no fish; from this and (2), it follows that we are not going to eat cod. From (1), it also follows that we are going to eat either beef or cod, and therefore (since we are not going to eat cod) it may be concluded that we are going to eat beef.

In Fig. 3.1, we display a formal version of this simple piece of reasoning in a Jaškowski style of natural deduction. It may be seen to follow closely the informal version. We shall be using the same abbreviations as in the “Key List” of Sect. 3.2, i.e., B , We are going to eat beef; C , We are going to eat cod; F , There is fish. Again as in Sect. 3.2, “ \vee ” stands for “either ... or ...,” “ \wedge ” for “both ... and ...,” “ \rightarrow ” for “if ... then ...,” and “ \neg ” for “it is not the case that...”

The corresponding Gentzen-style natural deduction displayed in Fig. 3.2 can be seen to be somewhat further removed from the informal version because it lacks the linear ordering of the propositions in the reasoning featured by the latter. But by writing

²⁹ Note that, since this rule (and the next one) is complex and refers to hypothetical parts, we are not dealing here with (part of) a “logical axiom system,” but with a natural deduction system.

Fig. 3.3 Second example of a Jaśkowski-style natural deduction

1. $\neg F \rightarrow \neg C$	(premise)
-----	introduction of hypothesis 1
2. C	(hypothesis 1)
-----	introduction of hypothesis 2
3. $\neg F$	(hypothesis 2)
4. $\neg C$	(from 1 and 3 by MP)
5. $C \wedge \neg C$	(from 2 and 4 by Con)
-----	withdrawal of hypothesis 2
6. F	(from 3-5 by RAA)
-----	withdrawal of hypothesis 1
$C \rightarrow F$	(from 2-6 by CP)

	$\neg F \rightarrow \neg C$ (premise)	$\neg F$ (hypothesis 2)
		----- MP
		$\neg C$
C (hypothesis 1)		----- Con
	$C \wedge \neg C$	
	----- RAA (withdrawal of hypothesis 2)	
	F	
	----- CP (withdrawal of hypothesis 1)	
	$C \rightarrow F$	

Fig. 3.4 Second example of a Gentzen-style natural deduction

the local premises for each step in the argument directly above the local conclusion, the Gentzen version gives a better picture of the dependencies in the reasoning, much in the way argumentation structures do in the analysis of argumentation.

In the second example, there is a single premise stating that (1) if there is no fish, we are not going to eat cod. The conclusion to be reached is that if we are going to eat cod, there must be some fish. To deduce this from the premise, suppose (2) we are going to eat cod. Now we must show that in that case, there must be some fish. To show this, suppose the contradictory, i.e., (3) there is no fish. Then it follows from (1) and (3) that we are not going to eat cod. Hence, we get a contradiction: we are and we are not going to eat cod. Therefore, the last supposition (there is no fish) must be rejected, and we have shown that, in case (2) holds, it must be the case that there is some fish. Since supposition (2) permits us to derive that there is some fish, we may conclude that, if we are going to eat cod, there must be some fish. Figure 3.3 shows how this deduction looks in a Jaśkowski-style natural deduction, and Fig. 3.4 displays the corresponding Gentzen format.

Several logical notions discussed in this section have a counterpart in the theory of argumentation. The notion of logical validity as the characteristic of good argument corresponds to the various conditions of “soundness” or “adequacy” that figure among argumentation scholars. In both cases, a distinction is made between good and bad arguments. Logical argument schemes correspond to argument (or argumentation) schemes as they are used in argumentation theory. In both cases, a way to start showing that an argument is good would be to show that it instantiates a good scheme. For logic, this may suffice (according to the formal conception of validity), but for argumentation theory, this is usually only a first step. The structures of a logician’s natural deductions closely correspond to argumentation structures. They are excellently suited to analyze suppositional arguments, also when the latter are part of an argument that is not claimed to be deductively valid. We also saw that counterexamples of various kinds have a role to play in both logic and argumentation theory.

3.4 Traditional Approaches to Fallacies

Aristotle’s concept of arguments that are incorrect because of their inconclusiveness, i.e., arguments that offer merely seemingly valid reasoning that is actually invalid, has remained authoritative for a very long time as a standard definition of *fallacy*.³⁰ Authors who came after Aristotle often ignored the dialectical context of the concept, however. They also overlooked the differences between their own conception of deductively valid argument and Aristotle’s view of good deductive reasoning. In Aristotle’s approach, in good deductive reasoning (*sullogismos*), a conclusion not only follows necessarily from the premises but is also different from, as well as based on, these premises. In most respects, however, for a long time, most scholars only seemed to repeat Aristotle. In the Renaissance, some authors came to the fore, such as the French dialectician Petrus Ramus (1515–1572), who dismissed Aristotle’s views or even abandoned the study of fallacies altogether.

The Ramist British philosopher Francis Bacon (1561–1626) considers the study of fallacies to be “excellently handled” by Aristotle. Nevertheless, he claimed in 1605 in *The Advancement of Learning* (Bacon 1975) that there are more important fallacies, such as errors of thought and “vain opinions” which are caused by false appearances or *idols*. Among these fallacies are errors in communication caused by what Bacon calls *idols of the marketplace*: “false appearances that are imposed upon words, which are framed and applied according to conceit and capacities of the vulgar sort” (p. 134).

The Aristotelian list of fallacies is also continued to be used in *Logic or the Art of Thinking* – the “Port-Royal Logic” from 1662 of the French scholars Antoine Arnauld and Pierre Nicole (1865), who possibly worked together with Blaise Pascal. In this first modern approach, the Aristotelian fallacies are discussed and treated as *sophisms* of the scientific method. Next, fallacies are listed that can be

³⁰ See Sect. 2.4.1, (1) Inconclusiveness.

found in popular discourse, such as *using the force of threats* (not yet designated as *argumentum ad baculum*) and *drawing a general conclusion from an incomplete induction*. This division between fallacies associated with scientific discourse and fallacies in public discourse replaces the Aristotelian language-dependent versus language-independent distinction.

The most important addition to the fallacies of Aristotle's list proposed in the course of history consists of the fallacies known as the *ad fallacies*, a category of arguments first distinguished in the seventeenth century by the philosopher John Locke (1632–1704). The *argumentum ad hominem* (argument directed at the man) is the most familiar of this category.

It is not quite clear what Locke (1961) had in mind when he discussed in 1690 the *argumentum ad hominem* in *An Essay Concerning Human Understanding*. In the chapter “Of Reason,” he introduces three more types of *ad* arguments: *ad verecundiam*, *ad ignorantiam*, and *ad iudicium*.³¹ This gave him the reputation of being the “inventor” of the category of the *ad* fallacies. Yet Locke does not explicitly state that he considers any of the *ad* arguments to be fallacious:

[...] it may be worth our while a little to reflect on four sorts of arguments that men, in their reasonings with others, do ordinarily make use of to prevail on their assent, or at least so to awe them as to silence their opposition. (*Essay IV*, p. iii)

The *argumentum ad hominem* is characterized by Locke as follows:

A third way is to press a man with consequences drawn from his own principles or concessions. This is already known under the name of *argumentum ad hominem*. (*Essay IV*, p. iii)

The remark that the name *argumentum ad hominem* is already known reveals that Locke does not assume that he was introducing anything new. His source for this remark is not easy to trace. Hamblin (1970, pp. 161–162) claims that Locke is referring to a Latin translation of a passage from Aristotle's *Sophistical Refutations* and to several medieval treatises in which the term appears (see also Nuchelmans 1993).

Locke's definition of the *argumentum ad hominem* forms part of a long-standing tradition according to which the *ad hominem* was regarded to consist of making use of the other party's concessions in one's argument.³² In this view, arguing *ad hominem* is indispensable for successful argumentation. Since the 1950s, however, the term *argumentum ad hominem* is mostly used in a pejorative sense in

³¹ The *argumentum ad iudicium* is certainly not fallacious but sets a standard for using proofs drawn from the foundations of knowledge or probability.

³² Definitions of the *argumentum ad hominem* as an in principle acceptable kind of *ex concessis* arguing can be found in the works of Whately (1836, III.15, pp. 195–197), Schopenhauer (1970, p. 677), Johnstone Jr (1959, pp. 73, 81), and Perelman and Olbrechts-Tyteca (1969, pp. 110–114). See van Eemeren and Grootendorst (1993). See also Hamblin (1970, p. 41, pp. 158–163) and Finocchiaro (1974).

argumentation theory.³³ It has become the general term for the fallacy of attacking the other party's person, either directly by depicting them as stupid, bad, or unreliable (*abusive* variant) or indirectly by casting suspicion on their motives (*bias* or *circumstantial* variant) or pointing out a contradiction in their words or deeds (tu quoque – you too! – variant).³⁴

The following example is a modern case of an *argumentum ad hominem* (of the tu quoque variant) in the Lockean sense:

How can you say the Casinos in Las Vegas should be closed down? You've always said everyone should be free to decide for himself what to do or not to do.

In the following text fragment, two other of the four sorts of arguments mentioned by Locke are used, first (in italics) the *argumentum ad verecundiam* (awe-directed argument or argument of shame) and then (in italics) the *argumentum ad ignorantiam* (ignorance-directed argument):

Of course Beethoven may have dictated that symphony to Rosemary Brown: *In Playboy, the famous authoress Elisabeth Kübler-Ross recently explained that communication with the dead is perfectly possible. Anyway, nobody has ever proved that dead composers don't manifest themselves in this way.*

The *argumentum ad verecundiam* is generally described as a misplaced appeal to authority. This does not quite conform to the literal meaning of *verecundia* (diffidence, awe, shame, embarrassment, modesty), though it appears to be in line with what Locke intended. For Locke, the *argumentum ad verecundiam* refers to cases in which the speaker appeals to an authority and gives the impression that it would be arrogant of listeners to set themselves up against this authority. It can be reconstructed from Locke's remarks that for him an *argumentum ad ignorantiam* relates to the burden of proof in a debate. This type of argument occurs, according to Locke, when an arguer requires the Opponent to either accept the argument he has given as a defense of the standpoint or to come up with a better argument for the opposite standpoint. Nowadays, the *argumentum ad ignorantiam* is generally regarded as a fallacious appeal to ignorance or lack of proof (as in the Rosemary Brown example above). On the basis of the observed fact that something has not been proven to be the case, it is concluded that it is *not* the case – or the other way around.

³³ For the Aristotelian roots of the pejorative and the non-pejorative meanings of the term *argumentum ad hominem*, see Nuchelmans (1993). See also Sect. 2.4.3, of this volume.

³⁴ A great many authors also use the term *circumstantial ad hominem* to refer indiscriminately to all indirect ad hominem attacks (e.g., Copi 1961) or to refer to one of its variants: either the bias variant (e.g., Rescher 1964) or the tu quoque variant (e.g., Walton 1985, 1998). Cf. Krabbe and Walton (1994). Whately (1836, III.15, pp. 195-197) does not yet differentiate between different types of ad hominem explicitly, but indicates that the *argumentum ad hominem* is often described as “addressed to the peculiar circumstances, character, avowed opinions, or past conduct of the individual.” He also gives a famous example of a tu quoque argument (known as “the sportsman's rejoinder”) by means of which a sportsman accused of killing innocent animals defends himself by asking “why do you feed on the flesh of the harmless sheep and ox?” (1836, III.15, p. 196n).

An example of an *argumentum ad hominem* in the (non-Lockean) modern pejorative sense is the following (in italics):

The argument that the state may not impose limitations on free speech and thus may not contemplate any curtailment of the cable television explosion has only the appearance of being sound. This reasoning is *used by groups with a vested interest in the cable explosion going ahead*. It is therefore a false argument.

The ad hominem remark is not concerned with the facts of the matter and the argument that was given. Instead, it addresses the motives and background of those who have advanced an opinion. In the very general terms found in most modern interpretations of an *argumentum ad hominem*, it is a fallacious indirect attack of the bias variant on the person of one's Opponent rather than on the opponent's arguments.

In his *Elements of Logic*, the logician and rhetorician Richard Whately (1787–1863) aimed in 1826 to present an improved account of the fallacies from a logical point of view. Defining a fallacy in the appendix as “any argument, or apparent argument, which professes to be decisive of the matter at hand, while in reality it is not,” he replaces the established definition with a wider one. Next to the class of (syllogistic) *logical* fallacies (e.g., *four terms* as a violation of the rule that a syllogism is a form of reasoning with no more than three terms), Whately distinguishes in his tree of classification a broad class of *nonlogical* (or material) fallacies, in which, according to him, “the Conclusion *does follow* from the Premises” (1836, III.4, p. 155, original emphasis). The latter category is subdivided into fallacies that involve a *wrongly assumed premise* (*petitio principii*, *false premise*) and those that involve an *irrelevant conclusion* (*ignoratio elenchi*), such as the *ad* fallacies. Whately has had a strong influence on the textbook traditions in both Britain and the United States (see Sect. 8.2 of this volume).

Whereas Whately holds that reasoning should conform to the rules of syllogism, the British philosopher John Stuart Mill (1806–1873) propounds in 1843 in *A System of Logic, Ratiocinative and Inductive Logic: Being a Connected View of the Principles of Evidence and the Methods of Scientific Investigation* (Mill 1970) a completely different view. He claims that only inductive inferences count as reasoning. Although Mill did create a category of *inductive* fallacies, his views and the empirical investigations ensuing from these views have not led to any crucial innovations in the theory of fallacies.

3.5 The Standard Treatment of Fallacies

The account of fallacies given in a large number of introductory logic textbooks of the 1950s and 1960s has been christened the *Standard Treatment of Fallacies* in Charles Hamblin's (1970) influential survey of the history of the study of fallacies from Aristotle onward. An important characteristic of the standard treatment is the shift from the Aristotelian dialectical perspective to a monological perspective. In this modern account, fallacy theory deals with errors in reasoning instead of

deceptive maneuvers made by a party who tries to outwit the other party in a critical exchange. Because some of the fallacies on Aristotle's list are intrinsically linked with the dialogical situation, one of the consequences of abandoning the context of critical debate is that in the standard treatment, the reason why a particular fallacy should be regarded as a fallacy may become obscure.

A good example is, according to Hamblin (1970, pp. 73–74), the fallacy of many questions in Aristotle's *Sophistical Refutations* (Aristotle 1984, 2012), which belongs to his category of language-independent fallacies.³⁵ Although in the context of critical debate, it is clear why Aristotle regards a refutation based on many questions as fallacious, in the context of monological reasoning, it is harder to pin down what is wrong. Many questions hinges on the dialogical situation and this fallacy can only be adequately analyzed in a dialectical approach. The fallacy of many questions occurs when a question is asked that can only be answered by answering at the same time some other question that is “concealed” in the original question. In the type of debate discussed by Aristotle, the defender is allowed to split up such questions into several questions (*Soph. ref.* 30, 181a36–37). According to modern interpretations of many questions, the answer to the original question *presupposes* a particular answer to one or more other (implicit) questions. By (implicitly or explicitly) forcing the other party to answer more than one question at a time, the fallacy of many questions is committed.³⁶

The following examples of many questions are nowadays commonly given as an illustration:

- (1) Are you still beating your wife?
- (2) When did you stop beating your wife?

A person who answers question (1) as intended, with a simple “Yes” or “No,” thereby admits being, or having been, in the habit of beating his wife. This is because (1) contains the following presupposition:

- (1a) You used to beat your wife.

The same presupposition is contained in question (2), but in that case there is also a second presupposition:

- (2a) You no longer beat your wife.

Asking questions of the many questions type can serve to pin down an opponent who fails to spot the treacherous nature of such a question. Such questions are considered incorrect ways of making opponents contradict themselves in a debate. This incorrect use happens, for example, if the thesis that is being defended is that the defender has never beaten his wife, and this thesis is at some point implicitly

³⁵ See Sect. 2.4.2.

³⁶ Because it is precisely the way in which the question is framed that offers the possibility of checkmating one's adversary, it is not so obvious why exactly Aristotle classifies this wrong move in the category of language-independent fallacies.

contradicted through a “No” answer of the defender to question (1) of the attacker (of course, the defender is in even deeper water if he answers “Yes”).

By addressing the dubious presupposition(s), the defender can avoid giving a direct answer to the original question. In the case of question (2), this strategy might lead to these replies:

(2') I am still beating her.

(2'') I have never beaten her.

Answer (2'') is the best way to parry question (2) if the discussion hinges on whether the defender is or was in the habit of beating his wife. A direct answer, such as “Last week,” would lead to an immediate and irrevocable defeat in the debate. The wording of question (1) virtually forces the defender of the thesis to answer “Yes” or “No” and thus to admit what the opponent tries to demonstrate: that the defender is, or was, in the habit of beating his wife.

Instead of distinguishing language-dependent fallacies from language-independent fallacies, as Aristotle did, in logic textbooks a distinction is often made between fallacies of *ambiguity* or *clearness* and fallacies of *relevance* (e.g., Copi 1972). The first category of fallacies is caused by lexical or grammatical ambiguity (“Pleasing students can be trying”) or shifts of emphasis (“Why did Adam eat the apple?” [rather than Eve]; “Why did Adam eat *the apple*?” [rather than the orange]). This category corresponds more or less with Aristotle’s language-dependent fallacies. Fallacies of *relevance* include the *ad* fallacies. They are considered irrelevant because they offer no logical justification for the opinion expressed; all the same, they may offer a rhetorically effective means to persuade an audience. Alongside various reinterpretations of the Aristotelian fallacies of *secundum quid*, *accident*,³⁷ and *many questions* and the traditional fallacies of *ad hominem*, *ad verecundiam*, and *ad ignorantiam*, the category of fallacies of relevance includes *false analogy* and *ethical* (or *ethotic*) and *pathetic* fallacies (parading one’s own qualities and playing on the sentiments of the audience, respectively). Other fallacies of relevance, including *begging the question*, follow below.

Begging the question, also known as *petitio principii* or *circular reasoning*,³⁸ means that the arguer assumes that what needs to be proven (the question at issue) has already been shown to hold, so that simply rephrasing it is enough. A well-known example is

God exists because the Bible says so, and the Bible is God’s word.

Ignoratio elenchi (ignorance of refutation) amounts, in the standard treatment interpretation, to an argument that does not address the thesis that happens to be the

³⁷ In the standard treatment, *secundum quid* is generally interpreted as an illicit inference from particulars to a general statement (hasty generalization) and the fallacy of accident as the converse inference (ignoring exceptional circumstances). See Hamblin (1970, pp. 26–31).

³⁸ Some authors make distinctions between those concepts.

point at issue, but some different matter. Thus, a person who contradicts that state-controlled housing projects are a useful means of alleviating the housing shortage may, for example, be opposed by advancing arguments for the thesis that there is a serious shortage of houses. This, however, is not the point at issue.

A *non sequitur* (it does not follow) is a form of argumentation, similar to *ignoratio elenchi*, in which both the arguments that are used and the conclusion that is drawn may be correct in themselves, but the conclusion does not follow from the arguments. The Dutch author Piet Grijns once gave this absurd example:

The devil painted the world. But he is not allowed to deduct the costs from his taxes. Then his nephew appears, in the year 1982. His nephew has an affair with the prime minister, and that is why the trees turn green again.

As the name suggests, *post hoc ergo propter hoc* (after this, therefore on account of this) means that it is claimed that since some event is temporally followed by another one, the former event caused the latter. This fallacy is committed, for instance, when it is claimed that the rise in employment which has manifested itself since the new government took office is the result of the new government's policies.

The *argumentum ad baculum* (argument of the stick) is an appeal to force that amounts to resorting to the use of threats against an adversary who refuses to accept one's standpoint. The threat may involve physical force but also other measures. Usually, such threats are issued indirectly, sometimes even preceded by an emphatic assurance that no pressure is being put upon the listener or reader:

Of course, I leave it entirely to you to take your stand, but you must realize that we are your best advertising client (and if you publish that article about our role in Nigeria you can forget about keeping our business).

The *argumentum ad misericordiam* (pity argument) is a fallacy in which an unjustified appeal is made to the audience's compassion to further one's own interests:

If you don't improve my grade for this course, I will lose my self-esteem and find it difficult to continue with my life.

The *argumentum ad populum* (argument directed at the people), sometimes referred to as "mob appeal" or as "snob appeal," appeals to the prejudices of the audience. This is, for instance, done by contrasting "we" (the speaker and his audience) and "they" (those against whom the discourse is aimed). In persuading some particular audience, the following might be an example:

There is nothing to be gained from these proposals: we socialists all know that the arms race is carefully maintained by the arms manufacturers and that in the final analysis it's just a matter of lining the pockets of a crowd of unscrupulous shareholders.

Under the heading of *argumentum ad populum* the so-called bandwagon argument is sometimes included (Copi 1982, p. 105). In this type of argument, it is

argued that a standpoint should be accepted because a large number of people think it is acceptable.

The *argumentum ad consequentiam* (consequence-directed argument or wishful thinking) is a fallacy in which a specific favorable or unfavorable light is cast on a factual thesis by pointing out its possible desirable or undesirable consequences. For example:

We may suppose no H-bombs will ever hit The Netherlands, for our country is so small that nothing would remain of it. (From a Civil Defence pamphlet issued in the 1960s)

Or

God exists; otherwise, life would be without hope.

The *slippery slope* is a causal argument in which unsubstantiated speculation about a sequence of consequences of a proposed course is carried to an extreme outcome. The arguer committing this fallacy wrongly suggests that by taking the proposed course, one will be going from bad to worse. In discussions about legalizing abortion and euthanasia, this type of argument frequently occurs:

If we start making euthanasia legal, we will end up with gas chambers like in Nazi Germany.

Straw man is the name of the fallacy of attributing a fictitious or distorted standpoint to another party that makes it easier to attack that party's standpoint.

Two fallacies that are by most authors of the standard treatment seen as a fallacy of ambiguity are the fallacies of *composition* and *division*. The fallacy of *composition* arises when characteristics of the parts are also attributed to the whole to make a standpoint concerning the whole acceptable. For example:

All the parts of the machine are light in weight; therefore, the machine is light in weight.
We use real butter, cream, and fresh lettuce, so our meals are delicious.

The fallacy of *division* is the converse:

The machine is heavy; therefore, all the parts of the machine are heavy.
The Catholic Church is rich; therefore, Catholics are rich.

These examples show that properties of the parts are not automatically transferable to the whole, and vice versa. The words "light" and "heavy," for instance, refer to relative properties. As soon as there are enough light parts, they will make the machine heavy (see van Eemeren and Garssen 2010).

3.6 Hamblin's Criticisms of the Standard Treatment

In *Fallacies*, Hamblin (1970) speaks of *the standard treatment* because he observes a remarkable uniformity in treatments of fallacies in prominent logic textbooks of his time. The standard treatment is "the typical or average account as it appears in the typical short chapter or appendix of the average modern textbook" (1970, p. 12).

Hamblin's characterization is based on textbooks by Cohen and Nagel (1934/1964), Black (1952), Oesterle (1952), Copi (1953), Schipper and Schuh (1960), and Salmon (1963), but applies also to other textbooks, such as Beardsley (1950a), Fearnside and Holther (1959), Carney and Scheer (1964), Rescher (1964), Kahane (1969, 1971), Michalos (1970), Gutenplan and Tamny (1971), and Purtill (1972). It should be added, however, that the unanimity among the textbooks is not as striking as Hamblin suggests.³⁹

Hamblin's monograph, which also contains his own theoretical contribution to the study of fallacies, is now a standard work on the subject. It is not only important because of the excellent historical overview of the study of fallacies it provides but also because of its diagnosis of the shortcomings of the standard treatment.⁴⁰ Hamblin's criticisms are devastating:

[...] what we find in most cases, I think it should be admitted, is as debased, worn-out and dogmatic a treatment as could be imagined – incredibly tradition-bound, yet lacking in logic and historical sense alike, and almost without connection to anything else in modern logic at all. (1970, p. 12)

This quotation illustrates Hamblin's earlier lament:

We have no theory of fallacy at all, in the sense in which we have theories of correct reasoning or inference. (1970, p. 11)

According to Hamblin, the shortcomings of the standard treatment already reveal themselves in the standard definition of the term *fallacy*⁴¹:

A fallacious argument, as almost every account from Aristotle onwards tells you, is one that *seems to be valid but is not so*. (1970, p. 12, original emphasis)

The problem with this definition is that most fallacies discussed in the standard treatment do not fit in with it. In fact, only a few formal fallacies unproblematically come under the definition.⁴² This applies, for instance, to two cases of taking a sufficient condition for a necessary condition or vice versa: *affirming the consequent* (inferring from the premises “If A, then B” and “B” that “A”) and *denying the antecedent* (inferring from the premises “If A, then B” and “not-A” that “not-B”).

The mismatch between the definition and the fallacies that can be observed in most other fallacies is sometimes due to the fact that there is no argument; in other

³⁹ For differences within the standard treatment in the accounts of the *argumentum ad hominem*, see van Eemeren and Grootendorst (1993, pp. 54–57).

⁴⁰ Mackenzie (2011) argues that Hamblin's book *Fallacies* was part of a much broader program. According to him, Hamblin used the subject of fallacies “as an illustration of how otherwise intractable questions about logic could be transformed by being considered in the context of dialogue” (p. 262).

⁴¹ It is, however, doubtful to what extent this definition was indeed commonly accepted. See Hansen (2002b).

⁴² Even for formal fallacies, the definition is not completely unproblematic: it is then still left unexplained why these fallacies seem to be valid.

cases, the reason is that, according to modern interpretations, the argument is not invalid at all. As an example of the former, Hamblin mentions the fallacy of *many questions*; as an example of the latter, he refers to the fallacy of *begging the question* (*petitio principii*, circular reasoning). With respect to the fallacy of *many questions*, Hamblin writes:

[...] a man who asks a misleading question can hardly be said to have argued, validly or invalidly, for anything at all. Where are his premises and what is his conclusion? (1970, p. 39)

And with respect to the fallacy of *begging the question*, he says:

However, by far the most important controversy surrounding *petitio principii* concerns J. S. Mill's claim that all valid reasoning commits the fallacy. (1970, p. 35)⁴³

This can be illustrated with an example:

It is my bicycle; therefore, it is my bicycle.

In a debate about whose bicycle it is, this argument is unlikely to have much effect, since the premise only repeats the conclusion. But according to standard logic, the argument as such is not invalid—because it instantiates a valid argument form:

A, therefore A

In still other cases, it would be grossly unilluminating (and missing the point) if one ascribed the error to the mere invalidity of the argument, since the fallaciousness has to do, primarily, with the incorrectness of an unexpressed premise (Hamblin 1970, p. 43). This is true for fallacies such as the *argumentum ad verecundiam* and the *argumentum ad populum* (of the bandwagon type) but also for the *argumentum ad hominem*. We can demonstrate this point by referring to an earlier example of an *argumentum ad verecundiam*:

Of course Beethoven may have dictated that symphony to Rosemary Brown: in *Playboy*, the famous authoress Elisabeth Kübler-Ross recently explained that communication with the dead is perfectly possible.

The fault here appears to have not so much to do with the form of the argument as with the incorrectness of an unexpressed premise (see van Eemeren and Grootendorst 1992a, pp. 60–72). If the unexpressed premises are made explicit, the argument is not *per se* invalid:

- (1) Elisabeth Kübler-Ross has said that communication with the dead is possible.
- (2) The statement that communication with the dead is possible belongs to the field of occultism.
- (3) Kübler-Ross is an authority in the field of occultism; everything she says about it is true.
- (4) If communication with the dead were possible, Beethoven's dictating that symphony to Rosemary Brown would be possible.

⁴³ See also Hamblin (1970, p. 226). According to Woods (1999, pp. 317–323), this was actually not Mill's position.

Therefore:

(5) It is possible that Beethoven dictated that symphony to Rosemary Brown.

This argument has the following form:

- (1') *X* says that *C* is possible.
- (2') The statement that *C* is possible is a statement of type *O*.
- (3') Everything *X* says about statements of type *O* is true.
- (4') If *C* were possible, *S* would be possible.

Therefore:

(5') *S* is possible.

If an objection is made to the original argument, it is not so likely to concern the form of the argument. It is more likely that its content causes problems. Such an objection would, for example, be "It's easy enough for Kübler-Ross to say things like that" or "Just how does that Kübler-Ross person know so much, then?"

Another example of missing the point by focusing on the validity of the argument is Copi's illustration of the abusive variant of the *argumentum ad hominem*, a head-on personal attack in which the arguer portrays his opponent as stupid, dishonest, or unreliable, thereby undermining the opponent's credibility:

Bacon's philosophy is untrustworthy because he was removed from his chancellorship for dishonesty. (1972, p. 75)

In this example, there is indeed an argument, but its fallaciousness seems to be lurking in the unacceptability of an unexpressed premise (why should a swindler not have any interesting philosophical ideas?) rather than in the invalidity of the argument. Many examples of the *argumentum ad hominem* are not even presented as arguments which have the form of a premise-conclusion sequence. Granted, some of them could be reconstructed as such without much difficulty, but others cannot. Take this example from Schopenhauer's (1970) "Eristische Dialektik," written between 1818 and 1830:

Vertheidigt er [der Gegner] z.B. den Selbstmord, so schreit man gleich "warum hängst du dich nicht auf?" [If, for instance, the opponent defends suicide, one yells immediately "Why don't you hang yourself?"]. (1970, p. 685)

It is not immediately clear what a reconstruction of this case should look like:

- (a) You are inconsistent *because* you defend suicide but you don't hang yourself.
- (b) Your defense of suicide is worthless *because* you don't hang yourself.
- (c) Suicide is wrong *because* you don't hang yourself.
- (d) You should hang yourself *because* you defend suicide.

It is difficult to make a well-founded choice between the alternatives because it is hard to determine what the speaker can be held to. Each reconstruction seems to ascribe to the person who yells "Why don't you hang yourself" a somewhat more absurd position than the preceding one.

Here, we face, in Hamblin's (1970) words, the problem of "nailing" a fallacy: the accused can quasi-naively maintain that no argument has been advanced.

Hamblin describes how that defense could proceed with regard to the use of an *argumentum ad hominem*:

Person A makes statement S: person B says “It was C who told you that, and I happen to know that his mother-in-law is living in sin with a Russian”: A objects, “The falsity of S does not follow from any facts about the morals of C’s mother-in-law: that is an *argumentum ad hominem*”: B may reply “I did not claim that it followed. I simply made a remark about incidentals of the statement’s history. Draw what conclusion you like. If the cap fits. . . .” (1970, p. 224)

Hamblin’s study has provoked various kinds of reaction.⁴⁴ In textbooks on logic, initially very little of his criticism of the standard treatment can be noticed. In reprints of Copi (1953), Rescher (1964), and Carney and Scheer (1964), for example, no attempt was made to deal with Hamblin’s objections.⁴⁵

An extreme and unexpected reaction to Hamblin can be found in Lambert and Ulrich’s (1980) textbook. In Chap. 3, entitled “Informal Fallacies,” the reader will not find a discussion of the informal fallacies but an explanation of why it would be better to drop this subject from the logic textbooks. Lambert and Ulrich’s main reason for this is that after reading Hamblin’s critique, they have come to the conclusion that, viewed from a systematic-theoretical perspective, the study of informal fallacies is a futile venture (pp. 24–28). They clarify their drastic step by means of a discussion of the *argumentum ad hominem*, which they define as an attempt to cast doubt on someone’s standpoint by bringing that person’s reputation into disrepute. Lambert and Ulrich contend that it is impossible to characterize the *argumentum ad hominem* satisfactorily by appealing to its form or to its content. Their general conclusion runs as follows:

[. . .] until a general characterization of informal fallacies can be given which enables one to tell with respect to any argument whether or not it exhibits one of the informal fallacies, knowing how to label certain paradigm cases of this or that mistake in reasoning is not really useful for determining whether a given argument is acceptable. (1980, p. 28)

To other authors, Hamblin’s monograph has been an important source of inspiration. Many studies about fallacies refer to his criticism of the standard treatment, aiming to develop a better alternative. The post-Hamblin studies differ considerably in their objectives, approaches, methods, and emphases.

First of all, there is the approach taken by the Canadian logicians John Woods and Douglas Walton. Since 1972, they made it their task to raise the study of fallacies to a higher level by thoroughly tackling one fallacy after another in a flood of articles and books. Initially, in their joint studies, they mainly used the theoretical apparatus of their own discipline: logic. Later, they were also influenced by

⁴⁴ For a critical overview of these reactions, see Grootendorst (1987).

⁴⁵ In his “Preface” to the fourth edition of *Introduction to Logic*, Copi (1972) states that in the chapter on fallacies he made grateful use of Hamblin’s critical remarks; however, a closer comparison reveals that, aside from a few minor alterations, Copi strictly adheres to the standard treatment.

pragmatic views, which is particularly apparent in Walton's work.⁴⁶ The *Woods-Walton approach* is further discussed in Chap. 6, "Formal Dialectical Approaches" (see Sect. 6.7) and Walton's later pragmatic approach in Chap. 7, "Informal Logic" (see Sect. 7.8).

The second approach to fallacies to be mentioned here is *pragma-dialectics* developed by the Dutch discourse and argumentation theorists Frans H. van Eemeren and Rob Grootendorst in the early 1980s. In pragma-dialectics, a fallacy is defined as a speech act that constitutes a violation of one or more rules for critical discussion, thereby jeopardizing the resolution of a difference of opinion on the merits. The pragma-dialectical approach to fallacies is treated in more detail in Chap. 10, "The Pragma-Dialectical Theory of Argumentation" (see Sect. 10.7).

A third renovation we should mention is the proposal to develop an *epistemic approach* to fallacies by the American philosophers John Biro and Harvey Siegel. Biro and Siegel (1992, 2006a) define the fallacies as epistemic failures of rationality. Their contribution to argumentation theory is discussed in Chap. 7, "Informal Logic" (see Sect. 7.6).⁴⁷

3.7 Crawshay-Williams's Analysis of Controversy

An original, though somewhat underestimated, early contributor to the study of argumentation is the British philosopher Rupert Crawshay-Williams (1908–1977). Crawshay-Williams moved in the same intellectual circles as his friend Bertrand Russell, and his publications refer frequently to the affinity between their ideas.⁴⁸ After having acquired the reputation of a leading reviewer of gramophone records in the 1930s, he published in 1947 *The Comforts of Unreason*, a brilliantly entertaining study of the motives behind irrational thought, in which attention is paid to "paralogisms" and other fallacies. Crawshay-Williams's (1957) main theoretical contribution to the study of argumentation is *Methods and Criteria of Reasoning: An Inquiry into the Structure of Controversy*.⁴⁹

Throughout his work, Crawshay-Williams pays a great deal of attention to verbal misunderstandings as a source of controversy. Under the influence of C. K.

⁴⁶ The pragmatic turn in Walton's work took place around 1985 with the publication of *Arguer's Position*. In their discussion of Walton (1987), van Eemeren and Grootendorst (1989) call attention to this shift in Walton's position.

⁴⁷ Still other approaches include the informal logical approach by Johnson and Blair (1994) (see Sect. 7.2) and the (exceptional) rhetorical approaches (Brinton 1995; Crosswhite 1993; Tindale 1999).

⁴⁸ Crawshay-Williams (1970) records their relationship affectionately in *Russell Remembered*.

⁴⁹ Some of Crawshay-Williams's most significant ideas can already be found in earlier publications (1946, 1947, 1948, 1951). See also Crawshay-Williams (1968). After his death, in 1977, he left behind the virtually completed manuscript for a book, *The Directive Function of Language*, which is still unpublished.

Ogden and I. A. Richards (1949), he puts strong emphasis on the role of language in discussions directed toward the resolution of differences of opinion. In *Methods and Criteria of Reasoning*, Crawshay-Williams defines the subject of his investigation as follows⁵⁰:

This book enquires how we use language as an instrument of reason, and whether our present use of it is efficient. (1957, p. 3)

In the final chapter, he gives a characterization of what he had in mind:

Indeed I could almost have called it an Introduction to the Theory of Logic and Rhetoric if I could have ensured that the word “logic” would be interpreted not in its specialist (formal deduction) sense but in the lay sense, and the word “rhetoric,” vice versa, not in the lay sense but in the specialist sense, used by I.A. Richards, of “a persistent, systematic, detailed inquiry into how words work . . . a study of misunderstanding and its remedies.” (p. 261)

Crawshay-Williams starts out from a reflection on the problem of how controversies come about in a discussion. More in particular, he wants to find out “why certain kinds of theoretical and philosophical controversy are so oddly intractable” (p. 3). And why is it that such disagreements cannot always be resolved.

If there is agreement between the advocates and the opponents of a given opinion as to the criteria according to which the statement concerned is to be tested, says Crawshay-Williams, then it ought not to take long to decide either (1) that the statement is true or (2) that it is false or (3) that the statement is probably true or (4) that it is probably false or (5) that it is impossible to determine whether it is true or false because there is not (yet) enough evidence available. Very often, however, the disputants cannot reach agreement on one of these conclusions. According to Crawshay-Williams, this is to be explained by their lack of agreement on the criteria by which the statement must be tested and by their failure to realize that this is the point where they disagree. In such a case, there is a fundamental misunderstanding.⁵¹

Discussions are, as a rule, conducted between two or more members of a group of people, which Crawshay-Williams calls a *company*. In order to resolve disagreements between the members of a company about a particular statement, there are three sorts of criteria available: (1) *logical criteria*, (2) *conventional criteria*, and (3) *empirical criteria*.

Logical criteria have to do with the rules for valid reasoning and good argument that are, explicitly or implicitly, accepted by the company.

When using *conventional criteria*, the interlocutors appeal to other statements about which the company is agreed. This agreement may have been created by accepting definitions, by establishing procedures, or by

⁵⁰ For reviews of *Methods and Criteria of Reasoning*, see Johnstone Jr (1957–1958, 1958–1959), Simmons (1959), Lazerowitz (1958–1959), Eveling (1959), Rescher (1959), and Hardin (1960).

⁵¹ This type of fundamental misunderstanding bears some resemblance to the type of intractable disagreement about “framework propositions” which Fogelin (1985) called “deep disagreement.” Fogelin, however, focuses on the deep disagreements that arise because of conflicts between belief structures (rather than between methodological approaches) (p. 8).

negotiation. The conventional criteria include, in Crawshay-Williams's (1957) view, also rules that the company implicitly accepts as taken for granted (p. 10). An example of a conventional rule that is generally tacitly accepted in a discussion is that words must not be used in meanings that deviate from common usage in the company. Another example is the principle that it is useless to make contradictory statements about the world (p. 30). As Crawshay-Williams emphasizes, it should be noted that to implicit conventional criteria, the following rider pertains:

Conventions which are not explicit can of course act effectively as criteria only while they remain unanimously accepted in a given company. (1957, p. 11)

For example, in a meeting, one may want to assert that the vote which has just been taken is invalid because of a lack of quorum. To do so effectively, however, it is required that the company assembled assumes that a valid vote needs a quorum. Moreover, it should be possible to back up the prevailing meaning of the term quorum by reference to the statutes or to standing orders.

Empirical criteria relate to empirical statements. They are, therefore, not relevant to discussions about other kinds of statements. Empirical criteria comprise an *objective criterion* and a *contextual criterion* (Crawshay-Williams 1957, pp. 34–36). The objective criterion is that the statement must be in accordance with the facts. The contextual criterion is that the way in which the facts are described must be in accordance with the *purpose* of making the statement.

According to Crawshay-Williams, the subject and the predicate of an empirical statement must always be related to each other with a view to a particular purpose. Because of this inherent connection with a certain purpose, he considers every empirical statement as a *methodological statement* (pp. 5–7).⁵² The statement “*S* is *P*” is in Crawshay-Williams's view equivalent to the statement “*S* is *P* with a view to *purpose M*” and, therefore, amounts to the methodological statement “In connection with purpose *M*, it is a good *method* to regard *S* as something which is commonly known as *P*” (pp. 34–37).⁵³

The purpose of an empirical statement constitutes to Crawshay-Williams the *context* of that statement⁵⁴:

I am afraid I must continue to use the words ‘purpose’ and ‘context’ somewhat indiscriminately. As can be seen, what I really need is a word which would cover the range of both notions. (p. 32)

⁵² In using the words “method” and “methodology,” Crawshay-Williams refers to their “lay” meaning of “the way in which” (p. 30).

⁵³ Often the form of an empirical statement is more complicated than would appear from “*S* is *P*.” Some statements, such as “London is bigger than Amsterdam,” express more complicated relations. Crawshay-Williams's analysis can be so adapted that such statements can also be formulated “methodologically.”

⁵⁴ In using the word “context” in this specific way, Crawshay-Williams gives it a more pronounced meaning than it generally has.

According to Crawshay-Williams, it is only possible to determine whether an empirical statement is true or false if the context of the statement is known. A difference of opinion as to its truth can never be resolved merely by looking at “the facts,” that is, by applying the objective criterion on its own. It is always necessary to look also at the purpose for which these facts are described. In other words, the contextual criterion must also be applied. Together, the objective criterion and the contextual criterion constitute the *empirical criterion*. This *empirical criterion* can now be formulated as follows: “Are the facts such that in connection with the context concerned we may say that the statement ‘*S* is *P*’ is correct?” (p. 36).

In practice, the context of a statement is often left unexpressed. In Crawshay-Williams’s opinion, this is one of the main reasons why fundamental misunderstandings arise and discussions fail. Statements whose context has not been expressed and remains obscure to those concerned he calls *indeterminate statements* (pp. 14–17). Here are some examples:

1. Mozart’s oeuvre comprises fourteen periods.
2. A language is a set of sentences.
3. Neuroses arise through a disturbance of the normal control apparatus.

To clear up misunderstandings, Crawshay-Williams provides in *Methods and Criteria of Reasoning* an analysis of discussions concerning indeterminate statements. The misleading aspect of such statements, in his opinion, is that they seem to suggest that one need only look at “the facts” to see whether these statements are true. In a discussion about an indeterminate statement, those participants who believe that the discussion can be decided by applying just the objective criterion are often victims of this suggestion. In spite of adducing all sorts of facts that they suppose corroborate the disputed statement, they do not succeed in resolving the difference of opinion. A way out of the impasse can only be found if they realize that the discussion parties may be assuming *different contexts* for the statement.

Crawshay-Williams explains that disagreement about an indeterminate statement can be resolved only if the statement is first made determinate: each of the parties must make explicit which context this party has in mind. He demonstrates this with the following example:

Mr. Brown is a schoolmaster standing in a field near to a white line marked on the ground. Jones and Smith are two schoolboys rapidly approaching him from the same direction. Jones crosses the white line at 3.45 p.m. and Smith crosses it half a second later. This, then, is the situation and these are often called “the objective facts.” Now how are we going to describe these facts? Are we going to say that Jones and Smith arrived at the same time or are we going to say that they arrived at different times? (1957, p. 22)

The correct answer to this question depends on the purpose the schoolmaster had in mind when he gave the two boys instructions to come to him. If he had only called to them because he wanted them to get him a deck chair, then the obvious thing would be to say that they had arrived *at the same time*. If, on the other hand, he had instructed them to run a race, then one would say that they had not arrived at the

same time. Thus, both the statement "The boys reached the master at the same time" and the statement "The boys did not reach the master at the same time" may be true.

According to Crawshay-Williams, these two empirical statements only *seem* contradictory: in reality, they are complementary. The reason why this is not immediately evident is that in the present form, they are indeterminate: the purpose for which they are made has not been indicated. When each statement's purpose is explicitly formulated, it turns out that the statements, instead of being contradictory, complement each other:

(4a) Statement 1 in indeterminate form:

The boys reached the master at the same time.

(4b) Statement 1 in determinate form:

Viewed with the purpose of comparing the times of arrival to establish whether the boys came as soon as they were called by the master, the boys reached the master at the same time.

(5a) Statement 2 in indeterminate form:

The boys did not reach the master at the same time.

(5b) Statement 2 in determinate form:

Viewed with the purpose of comparing the times of arrival to establish who has won the race, the boys did not reach the master at the same time.

An obvious objection to this analysis of the example is that "strictly speaking," "in fact," or "in reality," the boys did not reach the master at the same time, since a stopwatch would show a difference of half a second. Such an objection, says Crawshay-Williams, fails to distinguish between *correctness* and *precision* (pp. 111–113). The difference between the two can, again, be illustrated with the help of an example.

Suppose a curtain buyer measures a window and says it is two meters high, and a carpenter measures the same window and says it is 2.02 m high. Is the carpenter's description then "really" correct and the curtain buyer's not? No, the carpenter's description is only more precise (as it should be, for the carpenter's purposes). It is not so that the carpenter's description is "really" correct because it is precise, for it could always be made more precise. Along these lines, even the most precise description available would not "really" be correct because new and better measuring tools would enable us to make the description again more precise, *ad infinitum*.

According to Crawshay-Williams, a description is *correct* if its degree of precision is appropriate to its purpose. Anybody who raises the objection that the curtain buyer did "not really" determine the size of the window – or that the boys did "not really" reach the master at the same time – commits the error of making all possible contexts subordinate to a single context: one in which a difference of two millimeters, or half a second, is significant. Thus, the objector's own context is declared the *universal* context.

A major source of misunderstanding, says Crawshay-Williams, is to suppose one's own context to equal the universal context, without realizing that other interlocutors have a different context in mind. This occurs in the following example

of a company of people discussing the question of what a language is. One of the people involved says:

(6) A language is a set of sentences.

An interlocutor says:

(7) Not so: a language is a means of revealing and unfolding our humanity.

Both interlocutors behave as though their statements are true in a universal context. They therefore find themselves in a disagreement that cannot straightforwardly be resolved by discussion. To start a fruitful discussion, the disputants must make their statements determinate by indicating *in what context* they allocate their preferred predicates to the subject “language.” The determinate form of (6) might then look like this:

(6a) In order to study the structure of language, it is a good method to look upon a language as a set of sentences.

In this form, the *methodological* character of the statement is made clear. The context of (6) has now been made explicit, and the statement has thus become determinate.⁵⁵ With a little more trouble, the context of (7), too, could be ascertained and formulated, so that the present misunderstanding, and perhaps also the difference of opinion, may be eliminated.

More obstinate problems arise if the discussion is about a *nonempirical* statement. In that case, even though the parties may have indicated the context of their statements, the discussion cannot be decided by looking at “the facts.” In such a case, the empirical criterion is useless. To what extent can logical and conventional criteria provide the solution?

This question can be answered by making reference to an example provided by Crawshay-Williams (pp. 181–182). A company of people are discussing the following question:

(8) Can ethical statements be true or false?

One of the parties answers this question in the negative, advancing the following argument:

(9) a Statements in which no facts are expressed cannot be true or false.
and

⁵⁵ Cf. the elucidation of the context of the statement “A language is a set of sentences” provided by the grammarians de Haan, Koefoed, and des Tombe (1974): “This postulate may appear banal, but one might equally well have chosen another. For example, language is the medium through which people can communicate [...]. The difference is that the postulate chosen focuses all attention on the form of a language [...], not on what it is used for” (p. 3 our translation). It is apparent that these authors do not regard their context as the universal context.

b In ethical statements no facts are expressed.

Therefore:

c Ethical statements cannot be true or false.

The other party answers the question in the affirmative, justifying this by the following argument:

(10) a Ethical statements can be confirmed and denied with the words "true" and "false," respectively; for example, "It is true that peace is good."

and

b Statements that can be confirmed and denied with the words "true" and "false" can be true or false.

Therefore:

c Ethical statements can be true or false.

Both argument (9) and argument (10) are valid, so that logical criteria are of no help in resolving the difference of opinion regarding (8). The parties could now start talking about the premises of the arguments, but that would probably not take them much further, since they cannot easily be tested with the help of empirical criteria. And if new arguments were put up to support (9a), (9b), (10a), or (10b), the discussion would shift to the premises of these new arguments.

In other words, the parties are left with no alternative but to try to reach agreement on (8) by means of the conventional criteria. That is, they will have to negotiate agreements on the meanings in which they are going to use the terms *ethical statement*, *true*, and *false*. In order to resolve the problem, they might decide to define these terms in such a way that either conclusion (9c) or conclusion (10c) is made into an *analytic statement*, which is necessarily true. Crawshay-Williams warns that the parties should not just take some arbitrary decision with regard to the meanings of the terms. As in the case of the empirical criterion, their decision must be based on *contextual* considerations.

The subject of discussion is now no longer (8), but (11):

(11) Is it sensible to treat ethical statements as statements which can be true or false?

Because, in this formulation, the context has not been indicated, the question is still indeterminate. If the parties go on to formulate the context explicitly, they may then decide, on the grounds of the purpose of (11), whether they wish to regard (9c) or (10c) as an analytic statement.

In discussions that cannot be decided by applying empirical or logical criteria, the parties can thus try to resolve their problems by means of conventional criteria. Crawshay-Williams believes that, ultimately, logical rules and laws, too, are valid because they are accepted as such by the members of a company, whether on the basis of an explicit agreement or tacitly⁵⁶:

⁵⁶ Although logical rules and laws resemble in this respect statements like (6) and (9c), the difference remains, of course, that they relate to nondescriptive terms, whereas statements like (6) and (9c) are descriptive.

The only rules of logical deduction which are formally valid are those which are *accepted* as formally valid. (1957, p. 175)

The fact that logical rules and laws are accepted by the company invests them with *conventional validity*. This, however, is not enough: they must be rules and laws that have *methodological necessity*. According to Crawshay-Williams, the company's decision to confer on them the conventional status of a logical rule or law must be based on contextual considerations of a methodological kind, just like the definitions of the terms *ethical statement*, *true*, and *false* in (8). Take the fundamental logical principle known as the *law of noncontradiction*:

(12) No statement can be simultaneously true and false.

The validity of this law depends not only on its explicit or tacit acceptance by the company that makes use of it but also on its methodological necessity. In fact, the methodological reasons for accepting the law of noncontradiction invest it with its status as a logical law. A *methodological formulation* of (12) might look like this:

(12a) In order to be able to speak about the world without getting tied up in knots, it is a good method not to treat any statement whatever as simultaneously true and false.

Without any methodological considerations, there would be no reason for the company to accept a given rule as a logical law. Crawshay-Williams makes clear why this is so by reference to the *law of identity*:

The law of identity, for example, seems to assert something which no one but a madman could conceivably doubt: if A is not A, then we will all eat our hats in despair. But, of course, the reason why A simply must be A is that thinking and communicating by means of symbols would be impracticable otherwise. If we had no wish to think or communicate at all, the reason would disappear. (1957, p. 224)

When told that he or she must accept a particular rule as "necessarily true," a skeptic listening to the methodological considerations which have led the company to accept the law can, according to Crawshay-Williams, always say:

That is perhaps a good reason for your saying that I would be *well-advised* to treat it so. But it still does not explain why you use the word "must." Who *says* I must? (p. 225)

The only possible reply to this is:

Clearly, it is we — the company concerned — who say it. (p. 225)

Logical validity, then, depends in Crawshay-Williams's view both on the negotiated agreements in a company and on the methodological considerations underlying those agreements. It has, in other words, both a conventional and a contextual basis.⁵⁷ When seen in this perspective, general criteria of rationality always rest on two foundations: they must have an *intersubjective*

⁵⁷ Unlike the conventionalist view that logical validity is only a matter of agreements about usage, the concept of validity defended here requires these agreements to be methodologically motivated and thus not arbitrarily selected. Cf. Kneale and Kneale (1962, Chapter X.5).

conventional basis and an *objective* contextual basis. It is this clear revelation of the dual basis of rationality criteria that makes *Methods and Criteria of Reasoning* such an important contribution to the fundamentals of argumentation theory.⁵⁸

3.8 Næss on Clarifying Discussions

The Norwegian philosopher Arne Næss (1912–2009) has recurrently paid attention to argumentation and argumentation theory throughout his work.⁵⁹ Næss's approach to argumentation is semantic and empirical, stemming from his philosophical attitude. He has the attitude of a skeptic who wishes to bring conceptual and philosophical clarification to existing disagreements, without regarding any particular starting point as a priori evident or necessary.⁶⁰

According to Barth (1978, p. 155), Næss has developed from an “anti-apriorist,” who took a stand against fixed starting points, into an “a-apriorist,” who does not himself use any fixed starting points, not even an anti-apriorist one. Initially, his skepticism was the equivalent of anti-dogmatism. Later it amounted to a refusal to undertake a commitment to any particular standpoints in abstract philosophical matters, leading to an attitude of constant interrogation and searching.⁶¹ Næss's attitude is superbly illustrated by the following passage from a discussion with the British philosopher A. J. Ayer (NOS Dutch television, 1971):

Næss: Up to now a cigarette has always burned when you lit it. The floor never caved in. Food stilled your hunger. But can you deduce from that that things will still be the same in the future? It remains a circular argument, based on something that cannot be proved. A lot of philosophy is looking for answers to questions like that.

⁵⁸ Crawshaw-Williams's influence on theoretical thinking about argumentation can be clearly noticed in Barth and Krabbe (1982); van Eemeren and Grootendorst (1984, 1992a, 2004); van Eemeren, Grootendorst, Jackson, and Jacobs (1993); van Eemeren, Garssen, and Meuffels (2009); and van Eemeren (2010).

⁵⁹ Næss was chair of the philosophy department at the University of Oslo until an early retirement in 1970, about midway his career. In his obituary of Næss, Krabbe (2010) discusses Næss's contribution to the development of argumentation theory.

⁶⁰ Næss wrote on many philosophical issues besides empirical semantics and argumentation theory. In Gullvåg and Wetlesen (Eds., 1982), various aspects of Næss's philosophy are discussed. In 2005, *The Selected Works of Arne Næss* (ten volumes) were published.

⁶¹ Næss's skepticism can be characterized as Pyrrhonian, a kind of skepticism developed by Pyrrho and his followers in the fourth century. In *Scepticism*, Næss attempts to defend Pyrrhonism against “undeserved objections” (1968, p. 156). Although Pyrrhonism is the type of skepticism that insists on suspending any kind of belief in or adherence to any doctrine, according to Inga Bostad, in Næss's interpretation, the Pyrrhonist may have convictions – “not in the sense of defending assertions or dogma, but by demonstrating a form of ‘trust’ or ‘confidence’” (2011, p. 44).

The significance of Næss's philosophical attitude and his empirical semantic insights for the study of argumentation is clearly expressed in his article "How Can the Empirical Movement Be Promoted Today? A discussion of the empiricism of Otto Neurath and Rudolph Carnap"⁶²:

Let us assume that there is some difference of opinion among psychologists and that they want to settle the matter through discussion. A spokesman for [...] philosophical clarification [...] suggests to the participants that they should tentatively adopt certain rules as a technique of discussion and exposition. One of these rules could go as follows:

When a participant makes a statement *A* whereas someone else states non-*A* and it is unclear in what the difference consists, then both participants are to indicate the conditions — which it must be possible to realize in a research process — under which they would regard *A* as verified (or corroborated) resp. falsified (weakened). If both would be of the opinion that there are no such conditions, then this is to count as an indication that neither a continuation of the discussion nor additional research would contribute to the elimination of the verbal difference of opinion among them. At the same time it would count as an indication that their verbal disagreement is not connected with any more-than-verbal (*sachliche*) difference of opinion. (Næss 1992b, p. 140)

Næss goes on to say that the spokesman for philosophical clarification must not act as a "judge," but as a "broker" and a "middleman": this intermediary would have to recommend guidelines for an effective discussion, and these would have to turn out differently depending on the circumstances. Instead of logical-empiricist, pragmatic, or operationalist meaning criteria, "series of discussion models for various situations would emerge" (*loc. cit.*). In this clarification, the views of the broker on the question of what sorts of statements can justly claim to be knowledge would not have to be considered as criteria for evaluation. In other words, his views on cognitive meaningfulness, or regarding the relation between cognitive meaningfulness and testability, need not play a part. According to Næss, "the aim is to unburden the task philosophically and to soften down the pretensions connected with it." Otherwise, the fact is disguised that "more or less expedient rules for discussion and exposition are quite something else than general [criteria] for cognitive meaning" (1992b, p. 141).

It is conspicuous that Næss takes a disagreement in a discussion as his starting point. The argumentation theorist must not blow up his own yardstick – for example, particular criteria of meaningfulness – into a single all-embracing criterion. Instead, he must confine himself to giving "more or less effective rules for debating and formulating." These rules may vary, depending on the circumstances.

Discussion, or debate, is regarded by Næss as a *dialectic* amounting to a form of "systematic intersubjective verbal communication":

In order to characterize what I mean, the word "dialectic" might be preferable, whereby one will have to distinguish between eristics (rhetoric) and dialectics, between sophistics and philosophical investigation, roughly in the way Aristotle and Plato did. The debate or

⁶² Carnap's first name is misspelt: it is Rudolf. Originally, this paper was written in 1937–1939; in 1956 important comments were added when a German version was made accessible as a mimeographed reprint.

dialectic constitutes in my terminology a part of the scientific process, namely a systematic intersubjective verbal communication, whereby misunderstandings are eliminated and the various standpoints undergo the necessary precization (*Präzisierung*) so that recommendations for research programs may be subjected to testing. (1992b, p. 138)⁶³

The verbal communication involved in a dialectic must be conducted in accordance with certain discussion rules, procedural as well as material. The aim of a dialectic is in the first place to clear up misunderstandings and in the second place to prepare individual standpoints for testing.⁶⁴ The dialectic envisaged by Næss is close to classical dialectic:

Understood in this way the *philosophical dialectic* (*dialektikè*) seems to me to be today a new edition [...] of the classical dialogue (*dialogos*) in so far as this was [...] a method for the joint labour of several philosophers. (1992b, p. 138, original emphasis)

In *Interpretation and Preciseness* (Næss 1953), Næss fought against “armchair semantics” as practiced at Oxford (and elsewhere) by developing an empirical semantics. He reveals himself to be a radical empiricist and prefers methods from the social sciences, such as questionnaires and personal interviews, for investigating what in particular circles is understood by particular expressions.⁶⁵ The empirical research Næss wants to be carried out is designed to lead to a more precise determination of the statements about which disagreements exist.

Before a disagreement can be resolved, misunderstandings have to be eliminated. In *Communication and Argument*, Næss (1966) therefore provides rules for clearing up misunderstandings.⁶⁶ This book, which is dealing with interpretation, clarification, and argumentation, is designed to function as an aid in discussions as they occur in practice or in their analysis.⁶⁷

⁶³ In English, there are no direct translations available for the German noun *Präzisierung* (Norwegian: *presisering*) and the verb *präzisieren*, which are crucial in Næss’s work. Taking up a suggestion by Barth in her translations of Næss (1992a, b), we shall make use of two neologisms, which were also used by the Næss translator A Hannay in Næss (1966): (1) to *precizate* an utterance or a formulation means, to make it more precise by replacing it by an utterance of another formulation which eliminates some reasonable interpretations without adding new ones; (2) a *precization* (of an utterance or a formulation) means the outcome of a precizing operation, as well as the operation itself. Alternative terms that could be used are *precify* or *precisify* and *precification* or *precisification*.

⁶⁴ Næss was particularly interested in eliminating nonempirical formulations by way of discussion (1992b, p.111).

⁶⁵ *Interpretation and Preciseness* served as the philosophical background of the “Oslo School,” a group of researchers investigating semantic relations, such as synonymy, by means of questionnaires.

⁶⁶ *Communication and Argument* is the English translation, published in 1966, of Næss’s (1947) Norwegian textbook *En del Elementære Logiske Emner* [Some Elementary Logical Topics]. This book first appeared as a mimeographed edition in 1941. Since 1947, several new editions of *En del Elementære Logiske Emner* have appeared.

⁶⁷ Though written for practical purposes, *Communication and Argument* also introduces some theoretical insights. After its publication, Næss participated but rarely in the discussions of argumentation theorists. An exception is Næss (1993).

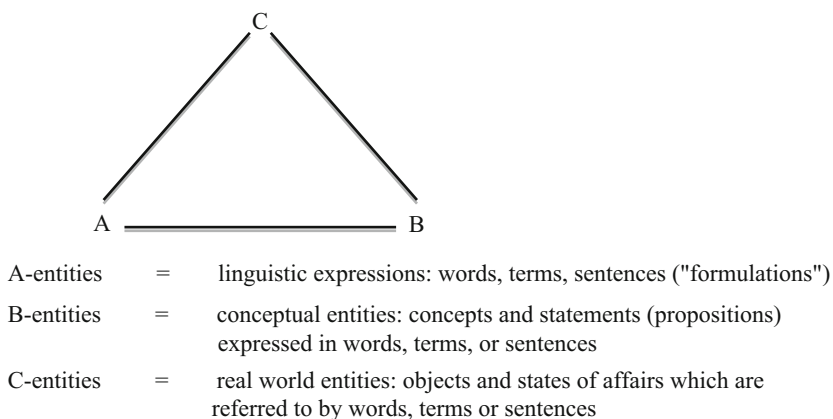


Fig. 3.5 The sign triangle

One of the central theses of *Communication and Argument* maintains that the participants can eliminate misunderstandings in a discussion by clarifying or, as Næss (1966, p. 38) calls, it *precizating* their statements. Since *precization* makes use of a domain of possible interpretations of an expression, it is necessary to explain first how Næss understands the term *interpretation*. He elucidates this concept by reference to the distinction between sentences, statements, and states of affairs, which was developed by the Stoics.⁶⁸ This distinction is often illustrated with the help of the *sign triangle* (p. 13). See Fig. 3.5.

According to Næss, to interpret a sentence is to assign a statement (proposition) to a formulation.⁶⁹ Suppose the formulation uttered is "He came home at two o'clock." To this formulation, we can either assign a statement to the effect that he came home at two o'clock in the morning or the statement to the effect that he came home at two o'clock in the afternoon. In either case, we interpret the original formulation. But, because we do not have direct access to C-entities, the statements we assign to the original formulation must, in turn, themselves be cast in words (A-entities). That is why Næss, as we shall see, defined the term *interpretation* so as to refer to A-entities and not to C-entities. Moreover, in his view, interpretation is not taking place in a vacuum, but in a particular context of (or in relation to) speaker, listener, and circumstances. This approach too, must be borne out by the definition of *interpretation*.

Næss (1966) suggests the following definition of *interpretation*: *Formulation U is an interpretation of formulation T means the same as In at least one context,*

⁶⁸ See Sect. 2.7.1 of this volume. The Stoics, however, had a square rather than a triangle.

⁶⁹ By a *formulation* (*formulering*), Næss means a linguistic expression (usually a sentence) that is used to express a statement.

U can express the same statement as *T* (p. 28).⁷⁰ Two remarks are in order. First, *reasonable* interpretations, in a given context, must be distinguished from *unreasonable* interpretations. Næss is aware of this and attempts to elucidate the notion of reasonableness in terms of frequency of occurrence in real or imaginable contexts. It is important to note that in this view reasonableness admits to having gradations and is, therefore, to be preferred to a notion with absolutist connotations such as “correctness” (pp. 31–32). Second, in many cases, a particular part of a formulation determines differences in the interpretation of the formulation as a whole. In our example, the difference depends on the words “two o’clock.” To deal with such complications, Næss (1966, p. 34) provides a second definition of interpretation: *To say that term *b* is an interpretation of term *a* means that If *b* is substituted for *a* in a formulation *T*₀, the result will be a formulation *T*₁ that gives us an interpretation of *T*₀.*

Inasmuch as real disagreements do not relate to formulations but to the statements they express, interlocutors must, in order to avoid misunderstandings in a discussion or debate, ensure that they assign the right statements to the formulations they use. If the interlocutors have reason to believe that they are not assigning the right statement to a formulation, they must request, and provide, precisizations.

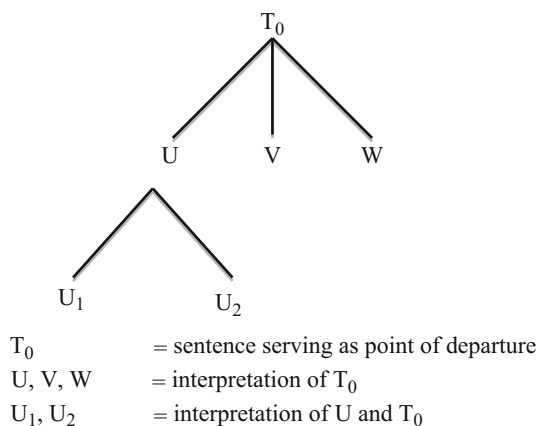
Næss (1966, p. 42) points out that precisizations should not be confused with specifications. A formulation *U* specifies another formulation *T*, if *U* asserts what *T* asserts but at the same time asserts something more about the same subject matter. Unlike a precisization, a specification does not add information that serves to identify what is being asserted (i.e., to enable one to know whether to accept or reject the assertion): it merely adds to an assertion that has already been identified.

Næss (1966, p. 39) suggests that *precisization* be defined as follows: *The formulation *U* is a precisization of the formulation *T* means the same as There is at least one reasonable interpretation of *T* which is not a reasonable interpretation of *U*, but there is no reasonable interpretation of *U* which is not also a reasonable interpretation of *T*.*⁷¹ A precisization is a limitation on the number of statements which may be assigned to a formulation:

⁷⁰ Næss here takes *U* and *T* to be different statements. We have omitted this stipulation in the definition given above because Næss omits it in later editions and because on the next page Næss claims that *T* is always an interpretation of *T*.

⁷¹ Depending on the context, a specification for some may be a precisization for others. “She is walking away from us,” for example, may be a *specification* of “She is leaving us” that adds information about the way she is leaving (namely, on foot). To those, however, who are tempted to interpret “She is leaving us” as saying that she is dying, “She is walking away from us” may be primarily a *precisization* of “She is leaving us.” Although all reasonable interpretations of “She is walking away from us” may be reasonable interpretations of “She is leaving us,” “She is leaving us” has at least one reasonable interpretation, namely, “She is dying,” that “She is walking away” has not. “She is walking away” can therefore be seen as a limitation on the number of interpretations which may be assigned to the formulation “She is leaving us” and hence as a precisization.

Fig. 3.6 U as a precization of T_0



In Fig. 3.6, V and W are reasonable interpretations of T_0 , but not of U . U itself is a reasonable interpretation of T_0 . U_1 and U_2 are reasonable interpretations of U but also of T_0 . Therefore, U is a precization of T_0 .

Næss (1966, p. 39) points out that *U is more precise than T* means the same as *U is a precization of T*. From this, it will be apparent that precization is not an absolute but a comparative concept. In later editions, Næss also observes that his definition suppresses two variables that a full definition should contain. One of these concerns the person for whom the precization is intended and the other concerns the general background of the discussion: *U* is more precise than *T* for a person *X* in context *Y* (1978, p. 27).

It is not Næss's intention that the participants in a discussion should continually precize their expressions or be as precise as would theoretically be possible. Discussion would then become a practical impossibility. Precization must only take place when there is a need for it: where the disagreement relates (or may relate) to the fact that different statements might be assigned to the same formulation. Since in that case the interlocutors have different statements in mind regarding the same formulation, there is a merely *verbal* disagreement, no real disagreement. Verbal disagreement makes it impossible to weigh standpoints against each other.

If a disagreement is (or has become) a *real* disagreement, then the standpoints can, and must, be weighed against each other.⁷² In developing a method for doing this, Næss starts from the dialectical idea that it is important to establish which standpoint is more *acceptable* than the other (or others). Just like precization,

⁷² The type of difference of opinion that Næss's resolution procedure is intended for is a *mixed* difference of opinion, in which the parties involved take opposite positions with respect to a proposition, not the basic difference of opinion where one party has put forward a standpoint and the other party is in doubt whether to accept it (see Sect. 1.1 of this volume).

acceptability is a comparative concept: to a person X or a group of people X , standpoint T_1 is more acceptable than standpoint T_2 .

To determine which of two conflicting standpoints is the more acceptable, it is necessary to examine both the evidence for and the evidence against those standpoints.⁷³ Here, the link between Næss's thinking and classical dialectical approaches becomes even clearer. In Næss's practical method for evaluating standpoints, the pieces of evidence both for and against a standpoint are weighed up. In order to acquire proficiency in examinations of this kind, Næss recommends doing exercises in compiling surveys of the available evidence. He differentiates between two sorts of survey: a *pro-et-contra* survey and a *pro-aut-contra* survey.

A *pro-et-contra* survey sums up the most important pieces of evidence that have been advanced or may be advanced, both in favor of (*pro*) and against (*contra*) a standpoint, i.e., in favor of the opposite standpoint.⁷⁴ A *pro-et-contra* survey is always preceded by a sufficiently precise formulation of the standpoint at issue. All this type of survey contains is what the interlocutors regard as counting for or against a certain standpoint. The dispute is then still undecided, so the survey does not include a conclusion.

A *pro-et-contra* survey provides an indication of the hierarchical structure of the arguments: complex argumentation is broken down into simple arguments. Figure 3.7 is taken from Næss (1978, p. 109) to illustrate this method.

The *pro-et-contra* survey is the basis on which the separate pieces of evidence (each expressed by means of a formulation) are weighed against each other.⁷⁵ The result of this weighing is expressed in the second survey of the evidence, the *pro-aut-contra* survey (for-or-against survey). This survey contains the evidence that its compiler regards as counting in favor of a standpoint or against the standpoint. The standpoint in question is the compiler's conclusion, whether positive or negative, drawn from the evidence. A *pro-aut-contra* survey should not contain any formulations that contradict each other.

Næss (1978, pp. 112–113) pictures a *pro-aut-contra* survey as a tug-of-war between two opposite conclusions, F_0 and not- F_0 corresponding to the two ends of a rope (see Fig. 3.8, after Næss 1978, p. 113). He visualizes the arguments as side ropes attached to the main rope. The tenability of each piece of evidence adduced in

⁷³ In this connection, Næss (1966, p. 101) refers to the Greek philosopher Carneades (ca. 214–ca. 129 B.C.), who believed that there is always something to be said for and against an opinion. According to Næss, absolute certainty is not possible, and for assessing an argumentation, it is not necessary either.

⁷⁴ The type of argument portrayed in a *pro-et-contra* survey is similar to Wellman's (1971) concept of a "conductive argument," which has been the subject of much discussion among informal logicians (see Sect. 7.5 of this volume).

⁷⁵ Especially with public discussions, the compilation of a *pro-et-contra* survey containing all the arguments put forward by the parties, including the arguments that are untenable or irrelevant, provides a broad basis from which an evaluator may select for his *pro-aut-contra* survey the arguments he regards worth considering.

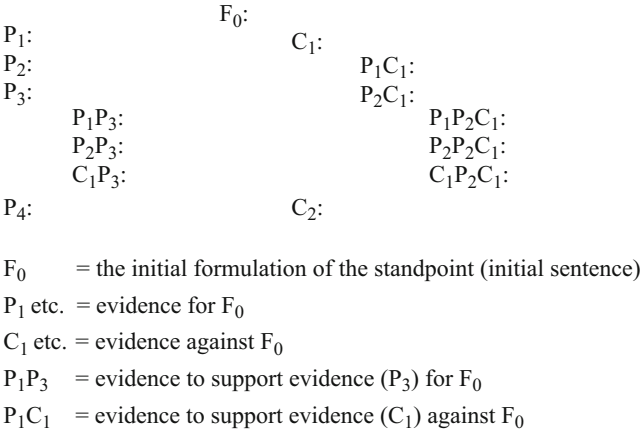


Fig. 3.7 Scheme of a pro-et-contra survey

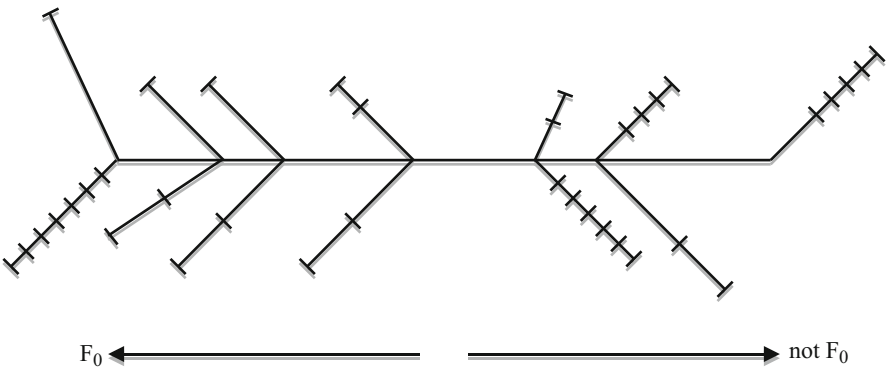


Fig. 3.8 The pro-aut-contra survey as a tug-of-war

an argument he visualizes as the number of tuggers pulling at the corresponding side rope (in the diagram, each tugger is represented by a small cross line) and its justifying force (for either F_0 or not- F_0) by the acute angle between the side rope and the main rope: the more justifying force an argument has in the eyes of the surveyor, the more acute this angle is portrayed. The result of the tugging depends not only on the number of tuggers on each side of the rope but also on the effectiveness of the tugging directions. The greater the justifying force of the argument or, in Næss's terms, the higher its "proof potential," the sharper the angle and thus the more an argument contributes to supporting either the conclusion F_0 or its opposite not- F_0 .

Whether conclusion F_0 is considered to be more acceptable than conclusion not- F_0 by the surveyor depends on how he judges both the *tenability* and the *justifying force* of each piece of evidence on each side.⁷⁶ The tenability of a piece of evidence is determined by its truth, correctness, or plausibility. Its justifying force is equal to its proof potential, which Næss also calls its “relevance.” Næss (1966, p. 110) gives the following example:

F_0 : It will rain tonight.

P_1 : The sky is covered with grey clouds.

P_2 : The swallows are flying low.

C_1 : The barometer is rising.

When taken together, the proof potential (for F_0) of P_1 and P_2 is equal to the degree of certainty of the hypothesis “If the sky is covered with gray clouds and the swallows are flying low, then it will rain tonight.” The proof potential of C_1 (for not- F_0) is equal to the degree of certainty of the hypothesis “If the barometer is rising, it will not rain tonight.”

As regards the procedure to be followed when weighing up an argument, he distinguishes between *descriptive* theses, in which it is asserted that something is so, and *normative* theses, in which it is asserted that something ought to be so or should be done (pp. 109–110). In the case of descriptive theses, the concept of proof potential resembles to some extent that of validity. However, if validity is seen as absolute – arguments are either valid or not – and is taken to imply that valid arguments cannot possibly have true premises (the evidence) and a false conclusion (the standpoint) at the same time, the concept of proof potential will be much less stringent. In any case, proof potential is a comparative concept: a piece of evidence for a descriptive conclusion has more proof potential than another piece of evidence, if the hypothesis that the conclusion is true, given that the first piece of evidence holds, is more certain than the hypothesis that the conclusion is true, given that the second piece of evidence holds.

If the conclusion is normative and the evidence consists of consequences that would ensue if the situation or action recommended in the standpoint were actualized, the proof potential of the evidence varies in accordance with the desirability of the actualization of these consequences. The following example is adapted from Næss (1966, p. 111):

F_0 : As long as I am a student I have to devote all my time to studying for my exams.

Antithesis: I must set aside some of my working hours for reading poetry.⁷⁷

P_1 : I will be earning a steady income a year earlier.

P_2 : I shall be a useful member of society a year earlier.

C_1 : I shall miss literary experiences.

C_2 : I shall become one-sided.

⁷⁶ The same kind of weighing of evidence for and against will often be required with regard to evidence for evidence and so on. Thus, an intricate web of separate “tugs-of-war” may arise.

⁷⁷ For the sake of clarity, it is often worthwhile to formulate the alternative (of the thesis (F_0)) that is actually being considered: the *antithesis*.

Each piece of evidence consists of a possible consequence of devoting all one's time to studying for one's exams. So P_1 , P_2 , etc. must be understood as hypothetical statements: "if I devote all my time to studying for my exams, I will be earning a steady income a year earlier" and so on. Suppose the compiler of this *pro-aut-contra* survey finds P_1 , P_2 , C_1 , and C_2 (understood as hypotheticals) all equally tenable. Therefore, the choice between P_1 and P_2 , on the one hand, and C_1 and C_2 , on the other, depends on the proof potential that, within a particular system of values and norms, can be attributed to the various pieces of evidence. If making money earlier and becoming a useful member of society is regarded more important by the compiler than acquiring a richer inner life, then P_1 and P_2 have greater proof potential for that person than C_1 and C_2 .

In practice, the argumentation involved can, of course, be much more complex. One might, for example, have to consider the evidence P_1P_1 that it would then be possible to buy that nice cottage in the country a year earlier (this enhances the proof potential of P_1), while one might also have to consider the evidence C_1C_2 that the design of the course of study is itself a guarantee for broad-mindedness (this detracts from the tenability of C_2) and so on.

Besides advice concerning precization, the making of surveys of arguments, and the weighing up of the arguments for and against a standpoint, Næss (1966, pp. 122–132) also provides some rules, or principles, that are designed to promote an adequate exchange of ideas. Among them are – in a shorthand formulation – "Keep to the point" and "Do not attribute to your opponent views to which he does not subscribe." Næss precizes these rules according to his own method, and he also specifies what counts as a violation of the rules.

The practical significance of *Communication and Argument* for the enhancement of the quality of argumentation is nicely registered by Barth (1978):

Generations of freshmen at the University of Oslo have had to study this book as prescribed preliminary reading, the only exceptions being those preparing to become dentists or pharmacists. For those two professions, and for them alone, verbalized communication was regarded as of secondary significance. (p. 162; our translation)

Næss's influence on the theoretical development of the study of argumentation has been rather limited. However, in the publications of a number of authors, the importance of his work is explicitly acknowledged.⁷⁸

3.9 Barth's Dual Approach to Logical Validity

In this last section, we shall discuss a contribution by Else Barth that pertains to the very foundations of argumentation theory. In an inaugural lecture dating from 1972, Barth, inspired by Næss, applies the ideas of Crawshaw-Williams by giving a dual

⁷⁸ Among these are the reviews by Mates (1967) and by Johnstone Jr (1968), as well as Göttert (1978), Berk (1979), Öhlschläger (1979), Barth and Krabbe (1982), Krabbe (1987), van Eemeren and Grootendorst (1984, 1992a, 2004), Rühl (2001), and van Eemeren (2010).

precization of logical validity.⁷⁹ In so doing, she puts forward some insights that are of major significance for the assessment of rationality conceptions.

Barth is concerned with the authority and character of logical laws and rules. Before summarizing her position, we shall first sketch the philosophical background from which it may be understood.

In research into the philosophy of logic, various attempts have been made, from a rationalistic perspective, to provide foundations for logic or to justify logic. But, as was well known at the time, such rationalistic maneuvers were doomed to failure (and not only where the principles of logic are concerned but for the principles of science and philosophy in general). Since any deduction of some thesis to be justified uses one or more premises or logical principles, a full justification would require one to provide also justifications for these premises and principles. Therefore, any such attempt will get entangled into one of the three branches of the so-called Münchhausen trilemma (Albert 1969, p. 13): it may lead one (1) into an infinite regress or (2) into a circular argument or (3) to the dogmatic assumption of some starting point. Yet this does not force one to give up rationalism. There is also the option, following Karl Popper (1902–1994), to reformulate rationalism as a *critical rationalism*, i.e., the aims of rationalism should be redefined: instead of trying to provide justifications, one should proceed by critical testing. Only propositions that survive the testing can be accepted (for as long as they survive).

Popper's student William W. Bartley III, when presenting in 1962 his brand of critical rationalism, called *pancritical rationalism* or *comprehensively critical rationalism*, emphasized that the pancritical rationalist need not and should not exempt his own philosophical position from being critically tested: "... for a pancritical rationalist, continued subjection to criticism of his allegiance to rationality is explicitly *part* of his rationalism" (Bartley 1984, p. 120). Pancritical rationalism extends to practically all possible theses or positions. Only logic seems to be in a different position. Being the instrument of criticism, logic cannot be totally abandoned, at least not without abandoning critical argument, so it seems (Bartley 1984, Sect. 5.4 and Appendix 5).

The question now arises, which particular part of logic cannot be abandoned without destroying the possibility of criticism. An attempt to answer this question was undertaken by Hans Lenk, who pointed out some logical constants (negation, implication) and logical rules (*modus ponens*, *modus tollens*, transitivity, and reflexivity of implication), as well as the principle of noncontradiction, as being indispensable (*unverzichtbar*) for rational criticism (1970, pp. 202–203).

According to Barth (1972), such limitations of the realm of rational criticism as Bartley and Lenk propose are unnecessary. Bartley's comprehensively critical rationalism, which she calls a *nearly-all-embracing critical rationalism* (p. 7, our

⁷⁹ Unfortunately, this publication is not available in English; however, a translation of its most crucial section can be found in Barth and Krabbe (1982, I.4, pp. 19–22).

translation), can be replaced by an *all-embracing critical rationalism* (p. 18). But to see this, one must realize that from the outset, the problem was misconceived: it was always erroneously assumed that there is some unique entity called *logic*. In fact, the word *logic* does not refer to any well-defined doctrine or theory, but to a field of study that comprises a plurality of theories, both traditional and modern:

If one sees this, one may easily realize that the old *problem of justification* is in fact a *problem of choice*. Let two or more logical systems be given. The problem, then, is to determine whether any of these systems *is to be preferred to* one or more of the others. This is a comparative relation: One system is for some reasons preferred to another. A logical system is, just like any other kind of theory, not absolutely correct or incorrect, not absolutely valid or invalid, but is or is not, for objective reasons, to be preferred to some other system. (Barth 1972, pp. 9–10, our translation)

This view is directly related to the ideas of Crawshay-Williams. The question immediately called to mind is what sorts of reason one would have to make the comparison turn to the advantage of one of the logical systems being compared. The choice of a logical system must be in some relation to the purpose that system and the systems with which it is being compared are supposed to serve. As Crawshay-Williams puts it, this choice must be made on “methodological” grounds.

The question, then, is to what purpose or purposes a logical system must be suited. Barth adopts Russell’s suggestion that logical systems should be regarded as proposals for solving puzzles or problems.⁸⁰ What are the problems of logic? According to Barth, a logical system must have the capacity of solving so-called logico-intellectual language problems and in doing so simultaneously pursue the *principal objective of theoretical logic*. Barth defines a *logico-intellectual language problem* as follows:

The problem of constructing a fragment of language in such a way that a certain common need will be satisfied, while at the same time pursuing the principal objective of logic, is a logico-intellectual language problem. Every logico-intellectual language problem consists of a number of *conditions* that have to be satisfied by any solution. (Barth and Krabbe 1982, p. 20)⁸¹

Further, in Barth’s view:

The principal objective of theoretical logic is to produce an analysis of the structure of sentences and to develop definitions of old and new structural, non-referring, elements of language [i.e., logical constants], in such a manner that a fertile distinction can be drawn between “good”, or “sound”, and “bad”, or “unsound”, inferences or arguments. (Barth and Krabbe 1982, p. 19)⁸²

⁸⁰ Barth (1972, p. 12, Note 15) quotes Russell’s 1905 paper “On Denoting,” in which the latter writes: “A logical theory may be tested by its capacity for dealing with puzzles, and it is a wholesome plan, in thinking about logic, to stock the mind with as many puzzles as possible, since these serve much the same purpose as is served by experiments in physical science. I shall therefore state three puzzles which a theory as to denoting ought to be able to solve; and I shall show later that my theory solves them” (Russell 1956, p. 47).

⁸¹ Cf. Barth (1972, p. 14).

⁸² Cf. Barth (1972, p. 13).

This is something sought after in all logical systems.

Part of a logical system consists of the definitions or rules of usage for the logical constants with which the system is concerned. These definitions determine the meanings-in-use that are, in the system, assigned to these constants and that are crucial for determining the logical validity of arguments in which they occur. But what is the logico-intellectual language problem for which a particular definition of a particular logical constant would constitute a solution? Let us take the definition of negation as our example. The primary problem in this connection would be the following: how must the logical constant *not* be defined in order to make it possible to draw a distinction between correct and incorrect inferences in ordinary reasoning, so far as this correctness depends on the use of *not*?

One solution to this problem is to define the word *not* as follows: the addition of this logical constant to a statement *P* produces a statement *not-P*, which is false precisely when *P* is true—and true precisely when *P* is false. This definition makes it possible to determine the correctness of inferences (as far as *not* is concerned) by the method of truth tables or the method of semantic tableaux (see Sect. 3.2). It is only one of the possible solutions to this logico-intellectual language problem; others, for example, a three-valued one, are also conceivable (and have been proposed). Other logico-intellectual language problems, too, may admit of a plurality of solutions. If a proposed solution indeed solves the problem (i.e., if it satisfies the conditions set by the problem), then it is *adequate* in relation to this problem.⁸³

Because a problem can have more than one adequate solution, the question arises on what grounds one should prefer a particular solution to another one. Barth (1972) takes the view that two sorts of consideration underlie this choice: considerations relating to *objective validity* and considerations relating to *intersubjective validity*.

Considerations of *objective* (or *problem-solving*) *validity* amount to the following. A logical system or principle is *objectively better than* another system or principle, if and only if there is at least one logico-intellectual language problem for which that system or principle is adequate and the other is not while there is no such problem for which the converse is true. A system or principle that is better than all other competing systems or principles is *objectively valid*. Thus, the statement form “— is objectively valid” can be regarded as a first philosophically important precization of “— is logically valid.” In this precization, logical validity is a gradable concept. The precization of logical validity as objective validity accords with Crawshay-Williams’s contextual criterion of methodological necessity.

Considerations of *intersubjective validity*, on the other hand, amount to the following. Not every language user has to be convinced once and for all of the adequacy of a particular solution for a particular logico-intellectual language problem. This means that precizing logical validity as objective

⁸³ The solution given above, which presupposes the notions of truth and falsity, may be adequate in relation to the problem of defining the logical constant *not* for ordinary reasoning (though some would contest this), it is not so in relation to the similar problem for mathematical reasoning about the infinite, at least not according to intuitionist philosophers of mathematics. The latter problem needs to be solved by providing adequate deduction rules.

(or problem-solving) validity is not sufficient. A second precization is required, which Barth calls intersubjective (or *conventional*) validity. According to this precization, a logical system or principle counts as a *logical convention* if and only if the members of a well-defined *company* have committed themselves explicitly to that system or principle by a written declaration to that effect. Barth regards the statement form “— is at present a conventional principle of a company” as a “second philosophically important precization” of “— is logically valid” (p. 16; our translation). In this precization, logical validity is dependent on the acceptance by a company and therefore *time-dependent*. The precization of logical validity as intersubjective validity corresponds to Crawshay-Williams’s conventional criteria.

It will be apparent that in practice, one will rarely find a logical system or principle that meets the foregoing conditions and deserves to be termed conventionally valid. More often than not, there is no well-defined company and there is no declaration set out in a signed document. At the best of times, existing practices may lead one to infer that for a particular but imprecisely defined group of people, certain principles apparently have the status of conventions. Barth refers in such cases to *logical semi-conventions* and *semi-conventional principles* having *semi-conventional validity* (1972, p. 16).⁸⁴

We thus find that, according to the dual precization proposed by Barth, the normative strength of the prevailing logical systems and principles draws on two different sources: (1) problem-solving (or objective) validity and (2) (semi)conventional (or intersubjective) validity (*ibid.*). Only jointly do these two kinds of validity suffice to attain an “optimal course of monological and dialogical acts of language” (Barth and Krabbe 1982, p. 22).⁸⁵

Since logical validity must be precized in terms of a gradable notion of problem-solving validity and a time-dependent notion of conventional validity, no absolute value can be attached to any logical system or principle. These precizations also lead to the rejection of a totally relativistic standpoint implying that the value of a logical system or principle depends exclusively on the evaluating audience or company. Starting from the three conceptions of reasonableness distinguished by Toulmin (1976) and discussed in Sect. 1.2 (the anthropological, the geometrical, and the critical conception), the conception chosen by Barth (following in the footsteps of Crawshay-Williams) can best be characterized as a *critical* conception. Although Barth’s exposition pertains to logical validity, it also provides a useful starting point for precizing the rationality norms pertaining to the assessment of argumentation.⁸⁶

The consequence of this critical conception for the theory of argumentation is clearly that one should not start from the presumption that rules must be universal:

⁸⁴ Cf. Barth and Krabbe (1982, p. 22).

⁸⁵ Cf. Barth (1972, p. 17).

⁸⁶ In van Eemeren and Grootendorst (1984), it is argued why Barth’s conception of rationality is better suited to the study of argumentation than that of Toulmin or Perelman.

the rules for the validity, soundness, or appropriateness of argumentation are neither absolute nor timeless. Their acceptability depends both on their capacity for solving certain problems and on the extent to which arguers are prepared to adhere to them. Within the field of argumentation studies, therefore, theorists must develop a plurality of systems of rules for argumentation, the pros and cons of which are to be weighed up against each other. For each proposed system, it must be indicated which problems can be solved by its rules and to what extent these rules are acceptable for a company of (potential) interlocutors.

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4.1 Toulmin's Intellectual Background

The British-American philosopher Stephen E. Toulmin (1922–2009) gained an impressive reputation in the field of argumentation theory with *The Uses of Argument*, first published in 1958, in which he introduces a new model for the “layout of arguments” (Toulmin 2003).¹ Although in this monograph Toulmin uses consistently the term *argument* and never uses the term

¹ Although the model does not appear in Toulmin's later philosophical works, it can also be found in *An Introduction to Reasoning*, a practical textbook Toulmin published together with Richard Rieke and Allan Janik (1979). For the convenience of the reader, we shall refer in this chapter to the “updated edition” of *The Uses of Argument* published in 2003, which is readily accessible. The text of the book is unaltered since 1958, apart from the inclusion of a third (one-page) preface and a new (improved) index in the 2003 edition. It is important to notice that the 2003 edition has a new pagination.

argumentation, the model pertains to argumentation as it is defined in this volume (see [Sect. 1.1](#)).² Toulmin presents in the model a novel approach to analyzing the way in which claims can be justified in response to challenges. His model replaces the old concepts of “premise” and “conclusion” with the new concepts of “claim,” “data,” “warrant,” “modal qualifier,” “rebuttal,” and “backing.”³ Because of the impact Toulmin’s ideas about logic and everyday reasoning have had on argumentation theory, he can be regarded as one of the founding fathers of modern argumentation theory.

Toulmin studied mathematics and physics at King’s College, Cambridge. After graduating in 1942, he became a junior scientific officer for the Ministry of Aircraft Production, involved in the development of radar. In 1945 he abandoned this research for a Ph.D. in ethics in Cambridge, where he studied under Wittgenstein and John Wisdom. He studied also in Oxford under Gilbert Ryle and John Austin. During his philosophy studies Toulmin came under the influence of the “ordinary language philosophy” developed at Cambridge and Oxford. In 1949, he started lecturing in philosophy of science at Oxford University. In between various visiting professorships in Australia and America, he was a professor at Leeds University from 1955 to 1959. During his stay in Leeds, *The Uses of Argument* was published. In 1965 Toulmin moved to the United States. After having taught at Brandeis, Michigan State University, the University of Chicago, and Northwestern University, he accepted in 1993 a professorship at the Center for Multiethnic and Transnational Studies at the University of Southern California.

During his career as a philosopher, Toulmin has written on a variety of subjects, the common theme being how reason operates in actual discourse. His first article appeared in 1948. His doctoral dissertation is published as *An examination of the place of reason in ethics* (Toulmin 1950). In this monograph he argues, in a typically Toulminian vein, that moral philosophers should stop analyzing isolated ethical terms and examine, instead, how ethical judgment works in specific contexts. This early insistence on attention to context is a hallmark of Toulmin’s entire corpus of writing, up to and including his last book, *Return to Reason* (Toulmin 2001). Among the substantial series of books and articles he published are studies on logic, philosophy, epistemology, philosophy of science, history of science, ethics, and metaethics. His monographs most relevant to argumentation theory include *Human Understanding* (Toulmin 1972), *Wittgenstein’s Vienna* (Toulmin and Janik 1973), *Knowing and Acting* (Toulmin 1976), and *Cosmopolis* (Toulmin 1990).

² In discussing Toulmin’s ideas we shall, like Toulmin, use the term *argument*, except when he speaks of the (central) use of argument to support a claim, as happens in the model, and then we use, in line with what we explained in [Sect. 1.1](#), the term *argumentation*.

³ In describing Toulmin’s model we use his terminology. In the textbook he coauthored with Rieke and Janik, Toulmin later replaced the term *data* with the term *ground* (Toulmin et al. 1979).

In this chapter we are going to discuss Toulmin's contribution to argumentation theory. In [Sect. 4.2](#) we introduce his study *The Uses of Argument*, in which he expounded his views and explained his model. [Sect. 4.3](#) concentrates on the geometrical concept of validity that is, according to Toulmin, at the heart of the misunderstandings he wants to terminate. The distinction he makes in this endeavor between analytic and substantial arguments is treated in [Sect. 4.4](#). In [Sect. 4.5](#) we explain the difference between field-invariant and field-dependent aspects of argumentative discourse, which is vital to the alternative to the formal approach to analytic arguments offered by Toulmin. In [Sect. 4.6](#) we discuss the forms arguments take and their validity, which leads to the presentation of Toulmin's new model of argumentation in [Sect. 4.7](#). [Section 4.8](#) focuses on appropriations of the Toulmin model by argumentation theorists from different backgrounds, and [Sect. 4.9](#) discusses various applications of the model. In [Sect. 4.10](#) we conclude this chapter with a critical appreciation of Toulmin's contribution to argumentation theory.

4.2 The Uses of Argument

A central theme throughout Toulmin's studies is the way in which assertions and opinions concerning all sorts of topics, put forward in everyday life or in academic research, can be justified. Toulmin is particularly interested in the standards that must be applied in a rational assessment of arguments in support of such assertions and opinions (Toulmin 2006, p. 111). Is there one universal system of norms by which all sorts of arguments in all sorts of fields must be judged? Or is each sort of argument to be judged according to its own norms?

The Uses of Argument is, in 1958, the first publication in which Toulmin systematically set out his views on the question of the assessment of arguments.⁴ He criticized the way in which in philosophy, in particular in much of twentieth-century epistemology, reasoning has traditionally been treated as a matter of logical inference only.⁵ Toulmin's central thesis is that the standards and values of practical reasoning are not purely abstract and formal and that what the soundness criteria are depends largely on the nature of the problems at issue.⁶

⁴Peter Alexander, a colleague at Leeds, called it "Toulmin's *anti-logic* book." Much later, Toulmin's *Doktorvater* at Cambridge, Richard Braithwaite, proved to be "deeply pained to see one of his own students attacking his commitment to Inductive Logic" (Toulmin 2003, p. viii).

⁵According to the preface to the 1964 paperback edition of *The Uses of Argument*, Toulmin's target is "mathematical logic and much of twentieth-century epistemology" (p. viii).

⁶In discussing the evaluation of arguments, Toulmin (2003) makes use of the words "soundness," "validity," "cogency," and "strength," without explaining the precise difference between them. This gives the impression that he uses them interchangeably.

He rejects the view that there are universal norms for the evaluation of arguments and that these norms are supplied by formal logic. According to Toulmin, the scope and function of contemporary formal logic are too restricted for serving this purpose.⁷

In Toulmin's view, there is an essential difference between the norms which are relevant to evaluating, on the one hand, everyday argument and argument in the various scholarly disciplines and, on the other hand, the criteria of formal validity employed in formal logic.⁸ He is convinced that formal criteria as they are used in logic are irrelevant to the assessment of argument as it occurs in practice.⁹ If logic is to be the basis for evaluating practical arguments, it cannot remain merely a formal science. For dealing with such arguments, in Toulmin's view, a radical reorientation of logic is required.¹⁰

4.3 The Geometrical Model of Validity

According to Toulmin, logicians generally believe that arguments can be evaluated by means of universal norms. In his opinion, they hold this view because they mistakenly think that the validity of an argument depends solely on its form. In judging the validity of an argument, the content of the premises is supposed to be irrelevant. It does not matter either what the

⁷ In *Human Understanding*, Toulmin (1972) refers to what he considers to be the main issues discussed in *The Uses of Argument*.

⁸ Wherever Toulmin refers to formal validity, he also uses this phrase. When he uses the word "valid" without this qualifier "formally," he usually seems to be using it in the imprecise way it is ordinarily used in everyday language. Under the influence of ordinary language philosophy, he probably does so deliberately.

⁹ Toulmin allows for the view that formal criteria apply to mathematical arguments (2003, p. 118).

¹⁰ Such a radical reorientation would for Toulmin amount to going back to the Aristotelian roots of logic. He refers several times to the first sentence of the *Prior analytics*, where Aristotle expresses the double aim of logic: logic is concerned with *apodeixis* (i.e., with the way in which conclusions are to be established), and it is also the formal, deductive, and preferably axiomatic science (*episteme*) of their establishment (Toulmin 2003, pp. 2, 163, 173). However, according to David Hitchcock (personal communication), Toulmin misinterprets the first sentence of Aristotle's *Prior analytics*. In the first place, the sentence introduces the *Analytics* as a whole, not just the *Prior analytics*, and the explanation of what *apodeixis* and *epistēmē apodeiktikē* are does in fact not come until the *Posterior analytics*. The *Analytics* as a whole is not a treatise about logic but about deductive science. The logic of the *Prior analytics* is the underpinning for the scientific proofs (demonstrations) discussed in the *Posterior analytics*. The opening sentence therefore does not describe the subject matter of logic but the subject matter of the philosophy of the deductive sciences. In the second place, *epistēmē apodeiktikē* is not the science of proof (demonstration), but the understanding (knowledge, scientific knowledge) that consists in the ability to prove (demonstrate) something.

subject of the argument is or what sort of problems it aims to solve. In *Knowing and Acting* Toulmin (1976) calls this view of validity the “geometrical” model.¹¹

According to the geometrical model of validity, arguments in natural language can meet the “same rigorous standards as those in geometrical theory” (Toulmin 1976, p. 71). Historically, the task of establishing that beliefs are “well-founded” was “divided into two separated, and supposedly simpler, tasks. First, it was necessary to identify the *self-evident principles* at the base of any field of inquiry and then to check the *formal validity* of the arguments linking the beliefs in question to the basic principles of that field” (1976, pp. 71–72; italics in original).

How this happens can be illustrated with the following example of a classical syllogism:

All sprinters are runners.

All runners are athletes.

Therefore: All sprinters are athletes.¹²

The argument in this example has the following form:

All A’s are B’s.

All B’s are C’s.

Therefore: All A’s are C’s.

Although Toulmin himself established the validity of this argument form by reference to an Aristotelian syllogism,¹³ it may be easier to understand what he means if we visualize its validity by means of the (simplified) use of an Euler diagram, in which A, B, and C are each represented by a circle.¹⁴ The premises state that the set represented by the A circle is a subset of the set represented by the B circle and that the set represented by the B circle is a

¹¹ In elaborating on this concept in *Knowing and Acting*, Toulmin (1976) compares the “geometrical” view (or model) of rationality with the “anthropological” and the “critical” view of rationality (or reasonableness) (see Sect. 1.2 of this volume for these three conceptions). Toulmin traces the high status of the geometrical model back to Plato, who took, according to him, axiomatized geometry, with theorems deduced formally from supposedly self-evident and unchallengeable axioms, as a model of knowledge (Toulmin 1976, pp. 70–71).

¹² To keep it simple, we use commonly accepted premises which are supposed to be self-evident (which they are not really). A fully correct example is the following argument from number theory: $x + 0 = x$; $x + sy = s(x + y)$; hence $s0 + s0$. Here “s” abbreviates “the successor of” and “x” and “y” are variables. The conclusion states that $1 + 1 = 2$.

¹³ In *The Uses of Argument*, Toulmin refers to the logic of the syllogism when discussing the formal approach, but in his Preface to the updated edition of 2003, he adds that his criticisms were also directed at “a rigidly demonstrative deduction of the kind to be found in Euclidean geometry” (p. vii).

¹⁴ In his exposé Toulmin took the validity of the argument form in the example, the Barbara syllogism, to be self-evident. See Sect. 2.6 of this volume.

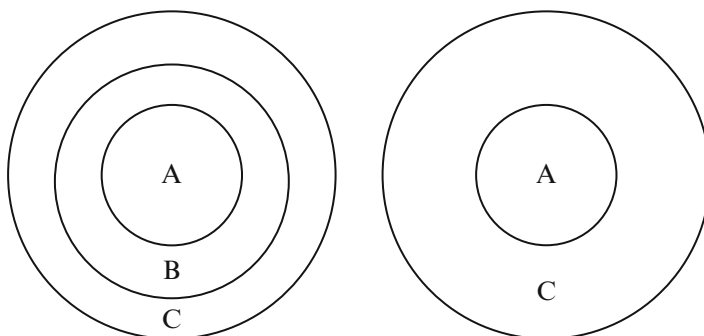


Fig. 4.1 Geometrical form of an argument

subset of the set represented by the C circle.¹⁵ This is what we see in the left half of Fig. 4.1.¹⁶

The drawing in Fig. 4.1 illustrates the formal necessity of the conclusion “All A is C”: it is impossible to draw the premises in such a way that the premises are properly reproduced without the A circle ending up inside the C circle or precisely overlapping it.¹⁷ This conclusion is shown in the right-hand part of Fig. 4.1.

According to Toulmin (2003), “validity” is in logic equated with “formal validity” in this geometrical sense. Formally valid arguments can be said to be “deductively” or “analytically” valid. This means that the conclusion necessarily follows from the premises:

[If we assume incorrectly that the analytic syllogism is the ideal sort of “deductive” argument] The only arguments we can fairly judge by “deductive” standards are those held out as and intended to be analytic, necessary and formally valid. All arguments which are confessedly substantial will be “non-deductive”, and by implication not formally valid. (Toulmin 2003, p. 143)

Toulmin rejects the claim reported in the first sentence, which he sees as a consequence of the misguided adoption of “analytic syllogisms” as the ideal sort of “deductive” argument. For “substantial” arguments formal validity is in

¹⁵ In fact, the diagram contains more information than the premises, since it exhibits the claim that A is a *proper* subset of B and B is a *proper* subset of C. We know that this is true in certain cases, but not in others.

¹⁶ To be more precise, the premises state that the set represented by the A circle is a subset of the set represented by the B circle and that the set represented by the B circle is a subset of the set represented by the C circle.

¹⁷ Because of the possibility of overlapping, you need in fact four different Euler diagrams to accommodate the four different possibilities, and in one of the four diagrams of the premises, the circle for the minor term is coextensive with the circle for the major term.

this perspective something entirely out of reach. It is unobtainable because the cogency of these arguments cannot be displayed in a formal way (p. 154). The rejection of formal validity for substantial arguments is, in Toulmin's view, a consequence of the adoption of analytic syllogisms as the ideal.

Toulmin (2003) disagrees with this narrow "geometrical" concept of validity. He allocates a much wider meaning to the term *validity*, arguing that logic must not be an "idealized" discipline closely connected to mathematics, but must evolve into a discipline based on the practice of argumentation, seeking closer ties with epistemology (p. 234).

4.4 Analytic and Substantial Arguments

According to Toulmin, arguments which comply with the logicians' criterion of formal validity cannot be regarded as representative examples of arguments as they occur in practice. On the contrary, outside the textbooks of logic and mathematics, they are difficult to find. The manner in which arguments occur in everyday life and in the academic disciplines is left untouched in such textbooks. If we judge them by the formal validity norm, most arguments that are regarded as perfectly acceptable in everyday life or in the academic disciplines must be regarded as invalid. As we mentioned earlier, the reason for this is that they are not analytic but what Toulmin calls "substantial."¹⁸

By calling arguments *substantial*, Toulmin (2003) refers to the fact that in such arguments the conclusion is not entailed (p. 116). It is, in non-Toulminian words, in these arguments not "contained" in the premises.¹⁹ The reason for this is, according to Toulmin, that the conclusion is based on premises (which he further differentiates) that are of a different "logical type" than the conclusion. According to Toulmin, substantial arguments often involve "type-jumps" in this sense (p. 155).²⁰ As a consequence, such arguments are usually not formally valid

¹⁸ As Hamby (2012) makes clear, it is very difficult to make sense of the various ways in which Toulmin characterizes the distinction between analytic and substantial arguments.

¹⁹ Toulmin does not use the term *contained*; he speaks (in a similar vein) of an *analytic* argument "if and only if the backing for the warrant authorising it includes, explicitly or implicitly, the information conveyed in the conclusion itself" (2003, p. 116). Unlike we do here, Toulmin does not use the term *premise*, but speaks of *data*, *warrant*, and *backing*. We shall introduce and explain these terms in Sect. 4.6 when preparing the introduction of the Toulmin model.

²⁰ David Hitchcock (personal communication) notices an inconsistency in this exposé. If substantial arguments often involve type-jumps, then some substantial arguments do not involve type-jumps. According to Hitchcock, a type-jump from the premises to the conclusion cannot be the reason why the premises do not entail the conclusion. An argument is substantial when there is a type-jump, but it can also be substantial when there is no type-jump.

in the sense that their conclusions are necessary²¹: they follow at most only probably.²²

This predicament can be clarified by way of an example. The phase of the moon on, say, May 24, 2114, can be predicted 100 years earlier by an astronomer making use of observations of the moon up to May 24, 2014. The reasoning the astronomer will use contains a conclusion in which an assertion is made about the future, and premises which relate to the past. Therefore, the premises are of a different logical type than the conclusion. However probable or plausible the astronomer's prediction may be, it will never follow necessarily from the premises.

For anyone who desires to achieve *certainty* as to the accuracy of the prediction, studying the argument is wasting time: this person must simply wait until the night of May 24, 2114. Similar logical gaps occur in arguments whose conclusions are assertions concerning the past and whose premises consist of data taken from the present, or in arguments in which conclusions about the laws of nature are based on particular observations and experiments, or in which an aesthetic judgment is founded on references to such attributes as form and color.

According to Toulmin, those who hold that arguments in which the logical type of the premises is different from that of the conclusion are invalid also think that validity is the supreme criterion of rationality and that valid arguments occur only in logic and mathematics. One consequence of this view is that arguments in academic disciplines which allow for a jump from one logical type to another between the premises and the conclusion are regarded as nonrational or at least less rational than the arguments in logic or mathematics. This is, in Toulmin's eyes, an absurd idea, which is counterintuitive and even dangerous. In addition, he regards this idea of logical validity as practically irrelevant to the evaluation of the soundness of arguments, whether in everyday life or in the academic disciplines.

Formal validity in the logical sense, says Toulmin, is neither a necessary nor a sufficient condition for the soundness of arguments. In his view, for making a justified claim, a requirement of "formal validity" *in quite another sense* is required. Sound argument, that is, argument that may be called "valid" in a broader sense, is to Toulmin argument – we would say "argumentation" – conducted in accordance with a proper *procedure* and in accordance with the specific soundness

²¹ To be more precise, according to Toulmin, the conclusions of some substantial arguments are necessitated by the data, but not in the sense of being logically necessitated (2003, pp. 18–20).

²² This does not mean that Toulmin thinks that analytic arguments are always formally valid and substantial arguments always formally invalid: "An argument in an[y] field whatever *may* be expressed in a formally valid manner, provided that the warrant is formulated explicitly as a warrant and authorises precisely the sort of inference in question [...]. On the other hand, an argument may be analytic, and yet not be expressed in a formally valid way: this is the case, for instance, when an analytic argument is written out with the backing of the warrant cited in place of the warrant itself" (2003, p. 125).

conditions of the *field* or *subject* concerned.²³ According to Toulmin, there is no single universal logical norm that will establish for all arguments whether premises justify their conclusion. Ultimately, the evaluation criteria depend on the nature of the problem at issue. In order to achieve a rational assessment in a discussion about whether the summer is going to be hot and dry, for instance, meteorological criteria need to be applied, not logical criteria.

The widening of the validity concept that Toulmin argues for has, in his opinion, far-reaching implications for logical research. It is no longer the logicians' task to develop systems of formally valid reasoning forms without any reference to the fields in which arguments are used. Because the arguments that occur in the various fields or academic disciplines are not analytic but substantial, there will be a difference between the sort of statements making up their premises and the sort of statements occurring in their conclusions. There is, however, no question of an unbridgeable logical gap that makes these arguments automatically defective. Substantial arguments are not automatically imperfect; rather, for such arguments the analytic ideal is not relevant.

Because the analytic ideal is not relevant for dealing with substantial arguments, Toulmin holds that logicians ought to abandon the criterion of formal validity in the strict sense. Instead, they should pay more attention to the practical aspects of assessing arguments outside mathematics, the one field where analytic arguments find their proper place. In Toulmin's view, logic should merge with epistemology. The epistemological logic thus produced should be devoted to studying the structure and content of argument in the various academic disciplines and sciences to discover the qualities and defects of the various sorts of arguments that are characteristic of different fields.

Instead of starting from an absolute analytic ideal, logicians ought to start from the idea that all sorts of arguments are in principle equal. The soundness of argument ("validity" in the broader sense) is an "intraterritorial," not an "interterritorial" notion. This means that argument must be assessed according to the particular norms which apply to the field to which the argumentation refers. The evaluation criteria must, in other words, not simply be shifted from the one territory to the other. It would be the task of logicians to identify, by using a comparative method, similarities and differences in the different sorts of arguments, both in simple and compound arguments. If differences are found, they must be respected. It is open to anybody so desiring to try to improve the argumentation methods in his or her field of interest, but it is wrong to start from the assumption that there are fields in which *all* methods of argument are automatically unsound.

One final implication that Toulmin attaches to his broadening of the concept of validity is that logic will be less of an a priori science and become more empirically and historically oriented. *Empirically oriented* means that logicians start looking at

²³ Argumentation that is conducted in accordance with a proper procedure and agrees with the pertinent soundness conditions can be viewed as "formally" valid in a procedural sense. See Sect. 6.1 of this volume for "formal" in the procedural (regulative) sense (*formal₃*).

the forms of argument that actually occur in the various fields; *historically oriented* means that logic is going to incorporate the history of ideas.²⁴ According to Toulmin, the great scientific discoveries of the past have changed not only the fields of the discoverers, and our general state of knowledge, but also the ways in which we argue and our norms for good argumentation. If logic were to evolve in this epistemological, comparative, empirical, and historical direction, it could be left to mathematicians to draft abstract formal systems of possible arguments that are cut off from the practice of using arguments in everyday life and in the various empirical disciplines.²⁵

To Toulmin himself, the implication of the development of a non-idealized practical logic is not necessarily that only specialists who are acquainted with the latest developments in a specific field would be competent to judge the soundness of the argumentation in that field. His intention in presenting his views was chiefly to shift the emphasis from an exclusive attention to universal evaluation criteria to a practice in which field-dependent and subject-related considerations are taken into account.

In *The Uses of Argument*, Toulmin's view of logic is a recurrent theme. Ultimately, his objections to logic amount to objections to the use of the concept of formal validity that is used by logicians as a universal standard for judging the soundness of arguments. His own conception is not only broader, it is also essentially different. The difference concerns the notion of "form." In logic, *form* is a quasi-geometrical concept, as we illustrated with the help of Euler diagrams, while Toulmin regards *form* as a procedural term, which has a similar content as *form* has in legal practice.

According to Toulmin, a quasi-geometrical interpretation of *form* leads to a model of argument that is too simple, since it fails to do justice to the complexity of argument in everyday life and the academic disciplines. He contrasts this interpretation, which is based on the mathematical model, with his own procedural interpretation, based on a jurisprudential model. A procedural interpretation of *form* can lead to a more adequate model of argumentation, in which the characteristic differences between types of argument in the wide range of argument fields to which argumentation may belong are also taken into account.

4.5 Field-Invariance and Field-Dependency

Toulmin (2003) regards the use of arguments that we call *argumentation* as an attempt to justify a statement.²⁶ To him, this justifying function implies the following: asserting something means making a "claim" – a person who asserts

²⁴ Toulmin extends his field-dependence thesis beyond the field of science to fields like morals and aesthetics.

²⁵ Notice that Toulmin thinks that even in mathematics standards have evolved (Toulmin 2006).

²⁶ In a similar way as we discussed when defining argumentation in Sect. 1.1 of this volume, Toulmin seems to construe the arguments he is interested in as (dialectical) verbal products resulting from a (dialectical) process of argumentative discourse.

something lays claim to acceptance by a potential challenger. Sometimes the claim needs to be justified by putting forward argumentation in support of the claim to meet the challenge.

Justification may be demanded for any claim that is made, whether the claim concerns a weather forecast by a meteorologist, an accusation of negligence by an employee against his or her employer, a doctor's diagnosis, a remark by a businessman about the dishonesty of a customer, or a critic's verdict on a painting. Toulmin wonders to what extent argumentation relating to such diverse subjects can be cast in the same mold and to what extent it will be possible to judge the arguments concerned by the same standards. He provides an answer to these questions by comparing justifiably a claim by means of putting forward arguments with jurisprudence.²⁷

The practice of law, too, is concerned with the justification of statements, and in law courts widely disparate matters may be at issue. The study of jurisprudence concerns itself, *inter alia*, with the legal process, while the study of argumentation demands a characterization of the "rational process" in general. The evidence presented in judicial proceedings varies from case to case, but also from sort of case to sort of case. For example, a civil action for libel will require evidence of a different kind than a murder charge in a criminal case. All the same, however different the cases may be, there will still be clear similarities in the procedure that is followed. First there will be a formulation of the charge or claim, and then there will be a stage during which evidence is produced and witnesses are heard, and finally judgment will be given and sentence passed.

According to Toulmin, constant elements like the ones just mentioned can be discerned in argumentation in general, while in every case there will also be some variable elements. In his view, an effort should be made to determine what is common to all types of argumentation occurring in a certain field and what is different in individual types. To this end, Toulmin introduces some technical terms: the notion of *logical type* we already encountered, *field of argument*, *field-dependent* (or "particular") elements, *field-invariant* (or "general") elements, *force* (of modal terms), and *criteria* (for using modal terms).

The notion of a "logical type" is not clearly defined by Toulmin, but from the examples he provides, one can get a fair idea of what he means.²⁸ Reports of present

²⁷ Ausín (2006) argues that in this respect Toulmin's approach resembles that of Leibniz, who also turned to jurisprudence as a model for reasoning. Also in other respects Toulmin's conception of rationality is not as irreconcilable with that of Leibniz as Toulmin himself suggests. Leibniz distinguishes between contingent and necessary truths. Because the logical calculus does not apply to the first, the weighing argumentative method should be used instead. When trying to rationally justify contingent statements, Toulmin and Leibniz both share the view that rationality must be open to differences, pluralism, and controversy.

²⁸ It is probable that Toulmin used the concept of "logical type" as it was introduced by Ryle in 1949: "The logical type or category to which a concept belongs is the set of ways in which it is logically legitimate to operate with it" (Ryle 1976, p. 10). The book in which Ryle used this concept had been highly influential, so Toulmin may have regarded the concept as so familiar that he did not think it necessary to give a definition.

and of past events, predictions about the future, verdicts of criminal guilt, aesthetic commendations, and geometrical axioms, for example, are all statements of a different logical type. Toulmin would consider each of the following statements to be of a different type:

1. The ministers handed in their resignations.
2. The government has just lost the confidence of the House.
3. Early elections will probably be held.
4. The guilty party has behaved improperly.
5. It is difficult to make out who is responsible for the crisis.
6. Measures will have to be taken to avoid a repetition.
7. Beethoven's later quartets are to be preferred over his earlier ones.

Statements of fact relating to the past (1) and to the present (2), predictions (3), moral judgments (4), causal judgments (5), opinions regarding a course of action to be followed (6), and aesthetic judgments (7) are in Toulmin's eyes examples of different logical types. The list is not exhaustive. Geometrical axioms, for example, might be added.

If statements that are to be justified are of the same logical type, and if all of the supporting statements are also of one and the same logical type, Toulmin considers the argumentation concerned to belong to the same *field of argument*. The supporting statements need not necessarily belong to the same logical type as those that are to be justified. A moral judgment ("He is a bad man") may, for instance, have statements of fact adduced in its support ("He beats his mother, he has poisoned his cats, and he is a tax dodger").

There are elements involved in argumentation that remain the same in all fields of argument and elements that differ from field to field. The general features of argumentation that are the same in all fields Toulmin calls *field-invariant*. Particular features that are different in each field of argument he calls *field-dependent*.

In argumentation, a wide variety of statements can occur. With this fact in mind, Toulmin wonders to what extent the form and soundness of argumentation in different fields of argument are field-invariant and to what extent they are field-dependent. In his opinion, just as in jurisprudence, in all cases of argumentation, a fixed procedure can be discerned, and *in that sense* argumentation has a field-invariant form. This procedure, or form, consists of a number of steps that have to be followed. The sequence of steps is put in the order that is most likely to be chosen when claims are justified.

According to Toulmin, the argumentative procedure starts with the formulation of a problem in the form of a question. The next step involves the listing of possible solutions, setting aside solutions that appear inadequate straightaway. The possible solutions are then weighed up against each other. Sometimes this process will lead to one solution emerging as the only right one; in that case, it is called a "necessary" solution. In other cases, a choice has to be made between several possible solutions, "the best" solution being the one that is, or appears to be, better or more likely than the others. In one field of argument, it will be more difficult to arrive at a solution which may be termed *necessary* or *the best* than in another. If, for example, moral attitudes or questions of personal taste are involved, finding such a solution can

present enormous problems. In all fields of argument, however, the steps just described can be identified. In this respect, Toulmin says, the procedural form of argumentation is therefore general, or field-invariant.

In the various steps, *modal terms* might occur, such as “impossible,” “possible,” “necessary,” and “probable.” The function of these terms is to indicate the degree of certainty or confidence with which the statements are made in the step concerned. A solution that emerges out of all the possible solutions as the only right one is called “necessary” or “certain.” If the solution is less certain, or subject to certain conditions, modal terms like “probably” or “presumably” will be appropriate.

To what extent, then, are modal terms field-dependent or field-invariant? Toulmin answers this question by referring to the modal term “cannot” (or “can’t”), which can appear, as the following examples show, in a wide variety of contexts:

1. You cannot lift a large piece of metal single-handed.
2. You cannot get ten thousand people into the Town Hall.
3. You cannot talk about a fox’s tail.
4. You cannot have a male sister.
5. You cannot smoke in a nonsmoking train compartment.
6. You cannot turn your son out of the house without a shilling.

In these examples, “cannot” sometimes means “be incapable” or “it is impossible” (1–4) and sometimes “ought not” (5–6). Nevertheless, the function of “cannot” is in all six examples the same: it eliminates something. The reason for the elimination, however, is in each case different: the limits of human strength (1), the limited capacity of a building (2), a linguistic convention (3), the meaning of a word (4), a social convention (5), and a moral rule (6). In all these cases, the modal verb “can” and the logical operator “not” are used to qualify the certainty of a particular statement, though the grounds for the qualification are different in each case. Toulmin (2003) refers to the function of modal words as their *force*: the force of a modal term is the practical point or message it conveys in the context in which it is used.²⁹ The grounds which justify the use of modal terms he calls the *criteria* for their appropriate use (p. 28).

The force of modal terms is, according to Toulmin, field-invariant, but the criteria that are applied to determine whether in a given context a given modal term has been used rightly or wrongly are field-dependent. For example, if we call something “impossible,” we must be in a position to justify this claim by advancing grounds or reasons, but the nature of our justification – relating to the criteria we invoke for judging our use of the term *impossible* – is different in each field of argumentation. Toulmin argues that something like this is true of all modal terms, including the term *probable*.³⁰

²⁹ Toulmin also speaks of the “moral” of a modal term, as in “the moral of a fable.”

³⁰ Some of the implications Toulmin attaches to this observation relate to semantic and philosophical questions that are not directly relevant here. They pertain to the development of an adequate semantic theory for modal words and to the vigorous philosophical controversy about probability in the 1960s. In that controversy, Toulmin opposed the views on probability put forward by Carnap (1950) and Kneale (1949).

4.6 The Form Arguments Take and Their Validity

In what way does the validity of arguments depend on the mold in which they are cast, and how must we view the form and validity of arguments if we are interested in evaluating them? These are the questions Toulmin asks when concentrating on arguments at the “micro-level” of dealing with claims, which he conceives as stopping points within the longer process of inquiry and justification at the “macro-level.” In answering these questions, he chooses legal argument as his example. The model he introduces to represent the layout of arguments is a procedural one. In this model, the various functions of the steps that are successively taken are given due consideration. Again, Toulmin wonders to which extent general, field-invariant elements play a part, and to which extent particular, field-dependent elements.

The first step in argumentation is the expressing of a *claim* (C) (or assertion, opinion, preference, view, judgment, and so on). People who make a claim on a certain matter thereby take upon themselves the duty to justify this claim in the event that it should be challenged. In general terms: He or she must be in a position to justify this claim if challenged to do so. How can a claim that has been challenged be justified? A primary requirement is to point to certain facts on which the claim is based, the *data* (D). The second step in argumentation thus consists of the production of data as support for the claim. Naturally, a challenger will not always immediately concede the accuracy of these data. In that case a preparatory step on the part of the arguer is required to try to remove the objection.

Even if the data produced are accepted as accurate, a different kind of request may follow. Rather than asking for more data, the challenger may require an account of how the data lead to the claim in question. The third step in the argumentation, then, consists of providing a justification or *warrant* (W) for using the data concerned as support for the claim. The warrant can be expressed by a general statement referring to a rule, principle, and so on. In principle, this general statement will have a hypothetical form (“if [*data*] then [*claim*]”). The warrant functions as a *bridge* between the data and the claim. In Toulmin's view, the warrant can take different forms. It can, for instance, be very brief:

1. If D then C.

However, the warrant can also be more explicitly expanded, in various ways. Toulmin motivates such expansions by showing the need for them by means of examples. Here are two examples provided by Toulmin (2003, p. 91):

2. Data such as D entitle one to make claims such as C.
3. Given data D, one may take it that C.

These two expansions make the function of a warrant more explicit. This function is to give permission to make a claim (of a specified kind) on the basis of data (of a corresponding specified kind). The expansions of a warrant indicate both that it is general, applying to a whole class of arguments with a certain kind of

claim and a corresponding kind of data, and that it is an authorization granting permission, like a warrant for someone’s arrest or a warrant for a search of someone’s property.

The difference between the data and the warrant is that the data point to the facts on which the claim is based (“What have you got to go on?”), while the warrant provides an account of how these data lead to the claim in question (“How do you get from your data to the claim?”). Another, less essential, difference is that “data are appealed to explicitly, warrants implicitly” (2003, p. 92). According to Toulmin (2003), there is a close relationship between the data and warrants used in any particular field of argument:

The data we cite if a claim is challenged depend on the warrants we are prepared to operate with in that field, and the warrants to which we commit ourselves are implicit in the particular steps from data to claims we are prepared to take and to admit. (p. 93)

So the warrant is implicitly present in the step from data to claim, and, conversely, the nature of the data depends on the nature of the warrant. This does not mean that in practice it will always be easy to recognize statements as data or as warrants from their grammatical form alone. As Toulmin (2003) admits:

[. . .] the distinction may appear far from absolute, and the same English sentence may serve a double function: it may be uttered, that is, in one situation to convey a piece of information, in another to authorise a step in an argument, and even perhaps in some contexts to do both these things at once. (pp. 91–92)

Sometimes, indeed, drawing any sharp distinction will be quite impossible. But this does, of course, not mean that it will be impossible in all cases to distinguish the different *functions* fulfilled by the statements in the argumentation:

At any rate we shall find it possible in *some* situations to distinguish clearly two different logical functions. (p. 92)

4.7 A New Model of Argumentation

It is now possible to draft a first, simple model of argumentation (or “argument,” as Toulmin says). We shall do so by reference to an example used by Toulmin. To indicate the function of *data* and *warrant*, we will introduce the procedural questions asked by a challenger:

<i>Claim</i> (C)	Harry is a British subject.	
		<i>Challenger:</i> What have you got to go on?
<i>Datum</i> (D)	Harry was born in Bermuda.	
		<i>Challenger:</i> How do you get there?
<i>Warrant</i> (W)	A man born in Bermuda will be a British subject.	

This example is schematized in Fig. 4.2.

In this example it is assumed that the warrant is a rule without any exceptions and that the accuracy of the warrant is not at issue. If there were exceptions to the rule, the force of the warrant would be weakened. In that case, conditions of *exception* or *rebuttal* (R) have to be inserted.³¹ The claim itself must then be weakened by means of a *qualifier* (Q).³² If the authority of the warrant is not accepted straightaway, a *backing* (B) is required. Thus three auxiliary steps may be necessary in argumentation.³³ We shall explain what these additions to the Toulmin model involve.

Because of the possible need of making the auxiliary steps just mentioned, Toulmin's extended model of argument consists of six elements. Let us illustrate these elements with the same Toulmin example as we used in explaining the simple model, again indicating the function of each subsequent statement by means of questions from a challenger:

<i>Claim</i> (C)	Harry is a British subject.	<i>Challenger:</i> What have you got to go on?
<i>Datum</i> (D)	Harry was born in Bermuda.	<i>Challenger:</i> How do you get there?
<i>Warrant</i> (W)	A man born in Bermuda will be a British subject.	<i>Challenger:</i> Is that necessarily so?
<i>Qualifier</i> (Q)	It is presumably so.	<i>Challenger:</i> When does the general rule not apply?
<i>Rebuttal</i> (R)	If his parents are aliens or if he has become a naturalized American (or acquired another kind of nationality which excludes being a British subject).	<i>Challenger:</i> What entitles you then to conclude from D (someone's being born in Bermuda) to C (that they can be presumed to be a British subject)?
<i>Backing</i> (B)	It is embodied in the following legislation: ...	

³¹ For the influence of the legal philosopher H. L. A. Hart on Toulmin's views of defeasibility and the need for rebuttals, see Sect. 11.3 of this volume.

³² A qualifier need not always weaken the claim. As Toulmin says "Some warrants authorise us to accept a claim unequivocally, given the appropriate data – these warrants entitle us in suitable cases to qualify our conclusion with the adverb 'necessarily'" (2003, p. 93).

³³ In Goodnight (1993) it is argued that the situation can be even more complex, because it may happen that the selection of backing to the warrant itself stands in need of justification. His legitimation inferences however do not justify the step from the backing to the warrant, but the selection of backing for the warrant (see Goodnight 2006).

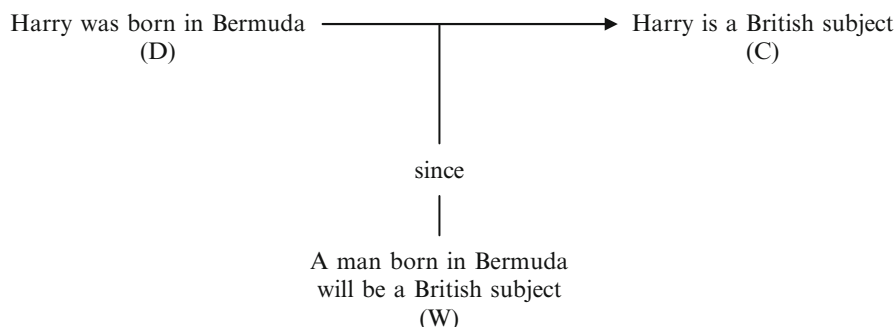


Fig. 4.2 Example of an argument described with Toulmin's simple model

This example is schematized in Fig. 4.3.

Of the six elements included in the extended model, the claim, the data, and the warrant are present in every argument. That is not to say that the warrant is always explicitly expressed; it can also be implicitly appealed to. This is, in fact, common practice. The rebuttal, the qualifier, and the backing need not always occur³⁴; they are only present when it is felt that there is a need for them.³⁵ For Toulmin's extended model, see Fig. 4.4.

Whether a backing is required in an argumentation depends on whether or not the warrant is accepted straightaway. If it is, then there is no need for a backing; if it is not, then there is. Toulmin (2003) observes that it is not possible to demand a backing for every warrant in a discussion, because that would make practical discussion impossible:

[...] unless, in any particular field of argument, we are prepared to work with warrants of *some* kind, it will become impossible in that field to subject arguments to rational assessment. (p. 93)

And:

Some warrants must be accepted provisionally without further challenge, if argument is to be open to us in the field in question: we should not even know what sort of data were of the slightest relevance to a conclusion, if we had not at least a provisional idea of the warrants acceptable in the situation confronting us. (p. 98)

³⁴ It is the "D, W/B, so C" pattern that Toulmin contrasts with the analysis in Aristotelian categorical syllogistic of arguments as fitting a "Minor premise; major premise; so conclusion" pattern. See Sect. 2.6 of this volume.

³⁵ According to Trent (1968), Toulmin does not claim completeness for his model, only adequacy for the purposes of the discussion.

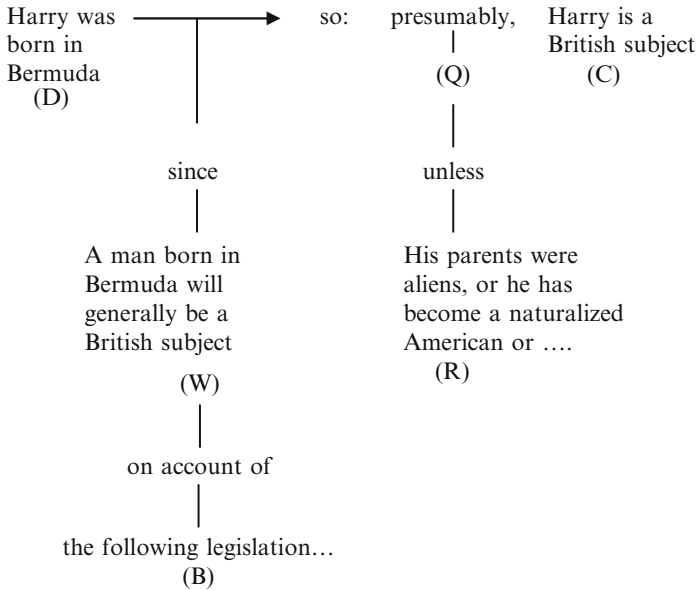
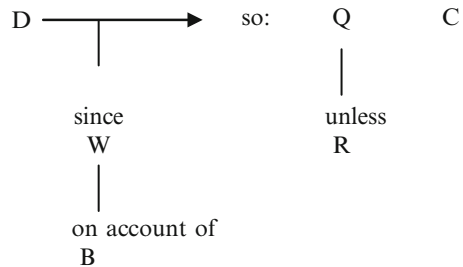


Fig. 4.3 Example of an argument described with Toulmin's extended model

Fig. 4.4 Toulmin's extended model



Toulmin sees the relation between the occurrence of a condition of rebuttal and the occurrence of a qualifier as follows. Whenever there is a condition of rebuttal, the claim must be weakened by a qualifier.³⁶ Conversely, however, it is not necessary that there is a condition of rebuttal to the warrant just because there is a qualifier to the claim. It is possible that the warrant contains not an absolute rule

³⁶With regard to the use of modal terms in qualifiers, Ennis (2006) presents and defends a delimited version in terms of speech acts of Toulmin's contextual definition of the qualifier "probably." With Toulmin, Ennis maintains "When I say 'S is probably P', I commit myself guardedly, tentatively or with reservations to the view that S is P, and (likewise guardedly) lend my authority to that view" (p. 163). In Ennis's view the qualifier "probably" allows one to guardedly commit to a statement. Any attempt to reduce this qualifier to a numeric value (i.e., formalization) will not do justice to actual use, for it will never grasp the true implications of a tentative commitment. Ennis stresses the need to focus on real arguments, not artificial ones.

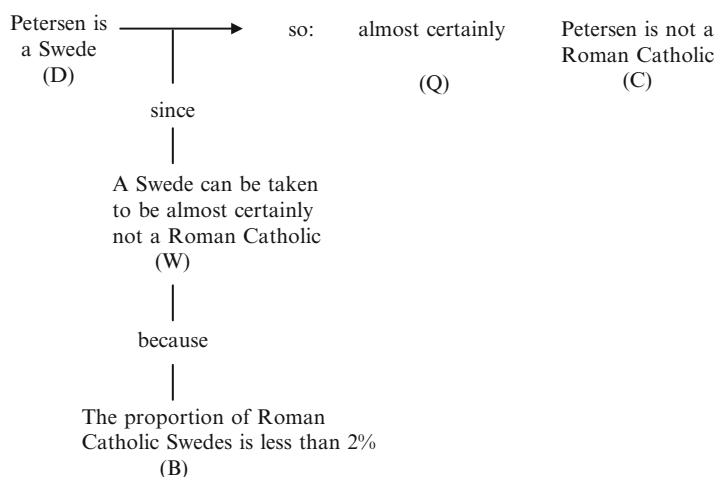


Fig. 4.5 Example of an argument with a qualifier without a rebuttal

but one with an addition such as “in general” (without specific exceptions being named). This is the case in the example in Fig. 4.5.

There is a slight complication that we should mention. The data in Toulmin’s model consist of facts produced in support of the claim. In argumentation, however, facts may also have another function. They can be referred to in the backing for the warrant (as happens in our example in Fig. 4.5) or to confirm or deny that a condition of rebuttal holds in a particular case.

In the example of Harry (see Fig. 4.3), the warrant may be applied without reservation if additional information about Harry includes such statements as the following³⁷:

1. One of his parents was not an alien.
2. He has not become a naturalized American.

Then the qualifier “presumably” could be removed, since the claim would “necessarily” follow from the data, by virtue of the warrant.³⁸

If, on the other hand, the additional information were to indicate that Harry belongs to one of the exceptional categories mentioned in the conditions of rebuttal, this would mean that “the general authority of the warrant would have to be set

³⁷ For the purpose of illustration, it is assumed (falsely) that the two conditions mentioned in the Harry example constitute a complete list.

³⁸ Schellens (1979) observes that, in this case, R no longer functions as a condition of rebuttal. Instead, there are three data: “Harry was born in Bermuda,” “Neither of his parents were aliens,” and “He has not become a naturalized American” and a complex warrant “A man born in Bermuda will generally be a British subject unless his parents are aliens or he has become a naturalized American.” If the counter-rebuttals are to be treated as data, then the warrant would be “Given that a person was born in Bermuda, has at least one parent that was not an alien, and has not become a naturalized American, then you may take it that the person must be a British subject.”

aside" (Toulmin 2003, p. 94). Consequently, the claim is not successfully defended, at least not on the ground that Harry was born in Bermuda.

What, now, is the relation between argumentation in Toulmin's model and legal argumentation? This relationship is apparent from the fact that both in Toulmin's model and in legal argumentation there are steps in the justification of a statement which fulfill different functions in the process of justification and which have to be executed according to the rules of a particular procedure. According to Toulmin, there are also more specific similarities. The claim corresponds with the indictment by the prosecution in a criminal case, the data with the evidence, and the warrant with the content of the legal rules or stipulations obtaining in the case concerned, while the backing may be compared with the relevant passages in the relevant legal codes or textbooks. In legal matters it may also be necessary, just as in argumentation in general, to discuss the extent to which a particular law, regulation, or rule applies in a particular case: whether it necessarily needs to be applied, or whether there are particular circumstances which make the case an exception, or whether the rule can only be applied in a weakened form.

In Toulmin's model, it is assumed that the data as such are accurate – or, in legal terms, that a case has been made out. What does the validity of the argumentation depend on, according to Toulmin? He does not mention this explicitly but seems to consider an argument "valid" if the required procedure has been correctly followed, that is, if the argument has been (or can be) cast in the mold represented in the model, and – crucially – the warrant for the step from data to claim is adequate and may be regarded as authoritative.

The warrant is adequate if it justifies the step from the data to the claim, thereby guaranteeing the accuracy of the claim, whether or not modified by a qualifier. According to Toulmin, the warrant is the crucial element in determining the validity of argumentation, for the warrant indicates explicitly *that* the step from data to claim is justified and also *why* this is so. The warrant is authoritative if it is immediately accepted as such or obtains its authority from the backing. All of this is made clear in *The Uses of Argument*, albeit not always explicitly.

To what degree, in this perspective, does form determine validity? And to what extent are form and validity field-invariant or field-dependent in the Toulmin model? This is what Toulmin (2003) says about the first question:

Yet one thing must be noticed straight away: provided that the correct warrant is employed, any argument can be expressed in the form "Data; warrant; so conclusion" and so become formally valid.³⁹ By suitable choice of phrasing, that is, any such argument can be so expressed that its validity is apparent simply from its form [...]. (2003, p. 110)

A few sentences further he continues as follows:

On the other hand, if we substitute the backing for the warrant, [...] there will no longer be any room for applying the idea of formal validity to our argument. (2003, p. 111)

³⁹ It should be noted that Toulmin realizes that the validity of the "Data; warrant; so conclusion" argument is a consequence of the applicability and adequacy of the warrant rather than its formal properties (2003, p. 111).

Toulmin's view regarding the second question is that the form of argumentation is field-invariant. Not only legal argumentation but argumentation from every field can, in principle, be represented in the same form. According to Toulmin, the validity of argumentation is not completely field-invariant but has a field-invariant and a field-dependent aspect. Validity is partly a function of the form (the procedure must have been correctly performed), and in this sense it is field-invariant. But the validity of an argument is also partly, and essentially, determined by the warrant, so that, ultimately, it is field-dependent.⁴⁰

Ultimately, the warrant obtains its authority from the backing, and backings can vary in different fields. For instance, in the field of law, a backing may refer to particular legal stipulations, as in the Harry example, but in other fields the backing may refer to the results of a census, as in the Petersen example, or to aesthetic norms, moral judgments, psychological patterns, or mathematical axioms. In every field of argument, it has to be determined which warrants may be regarded as authoritative and in what manner they must be backed.

More than 30 years after the publication of *The Uses of Argument*, Toulmin (1992) made this comment on his earlier views on the matter of field-dependency:

If I were rewriting the book today, I would broaden the context, and show that it is not just the “warrants” and “backing” that vary from field to field: even more, it is the *forums* of argumentation, the *stakes*, and the contextual details of “arguing” as an *activity*. (p. 9)

By now it should be clear that Toulmin had a conception of the notions of “form” and “validity” and of their relationship, which is radically different from the standard view in formal logic, with which he fundamentally disagrees. According to him, an important cause of the trouble is the distinction between “major” and “minor” premises as it was made in classical syllogistic (which Toulmin equates with the “logical view”).⁴¹ Toulmin finds this distinction misleadingly simple. In his view, the functions of the two sorts of premises are so different that it is even wrong to place them under the same label of “premise.”

Toulmin makes use of the Petersen example we mentioned in Fig. 4.5:

1. Petersen is a Swede.
2. No Swedes are Roman Catholics.
- So, certainly*
3. Petersen is not a Roman Catholic.

In this Toulminian syllogism, (1) is the minor premise and (2) the major premise. The major premise conceals, in Toulmin's view, an important distinction, because it can be interpreted either as a warrant (W) or as backing (B). These two interpretations are apparent from the following possible ways of “expanding” the case (p. 111):

(2a) A Swede can be taken to be certainly not a Roman Catholic.

(2b) The recorded proportion of Roman Catholic Swedes is zero.

⁴⁰ Toulmin's view that validity is ultimately field-dependent implies that in principle every argument field may claim rationality for the arguments being used in that field. The only condition Toulmin requires is that in the field concerned the warrant must be accepted as authoritative.

⁴¹ See Sect. 2.6 of this volume for a discussion of Aristotle's syllogistic.

Whether the major premise is interpreted as W or as B, in either case its function is quite different from that of the minor premise, which acts as a datum (D). However, (2a) represents the W-interpretation, (2b) the B-interpretation, and there is a functional difference between the two. The major premise in the syllogism takes no account of the different functions of the warrant and the backing and therefore contains a hidden complexity.

According to Toulmin, in the logical view the argument in the Petersen example – minor premise (1); major premise (2); therefore conclusion (3) – is regarded as valid because of its form. He points out that in the W-interpretation of the major premise (2a), the argument has a formally valid form, but the B-interpretation (2b) presents problems. In the latter interpretation, the argument is clearly not formally valid in the logical sense, even though it is perfectly acceptable, and therefore sound in a broader sense. Toulmin concludes that the validity of the argument with (2b) as a premise is not really a consequence of its formal properties and that the validity of the argument with (2) or (2a) as a premise can therefore not be a formal matter either:

Once we bring into the open the backing on which (in the last resort) the soundness of our arguments depends, the suggestion that validity is to be explained in terms of “formal properties,” in any geometrical sense, loses its plausibility. (p. 111)

According to Toulmin, logicians fail to see this problem because the “ambiguity” of the major premise conceals the crucial distinction between warrant and backing. Consequently, the fact that the validity of arguments ultimately depends on the backing remains obscured (pp. 100–114).

In Toulmin's view, the geometrical interpretation of validity prevalent in formal logic complicates dealing with validity in real-life arguments considerably. According to the geometrical view, an argument form is valid if the conclusion is contained in the premises, i.e., if it is, in Toulmin's formulation, simply a “formal transformation” of its premises (2003, p. 110). Toulmin summarizes this view as follows: “If the information we start from, as expressed in the major and the minor premisses, leads to the conclusion it does by a valid inference, that (it is said) is because the conclusion results simply from shuffling the parts of the premisses and rearranging them in a new pattern” (2003, p. 110).⁴² This, in Toulmin's view

⁴²In personal communication Hitchcock emphasized that this is an incorrect and inadequate account of formal validity as contemporary logicians conceive of it. First, not all arguments whose conclusions can be obtained by shuffling the parts of their premises are formally valid: “No horses are humans; all humans are animals; therefore, no horses are animals.” Second, not all formally valid arguments have conclusions that can be obtained by shuffling the parts of their premises: “You have credit for three one-semester courses in philosophy; therefore, you have met the prerequisite for this course of either being registered in a program in philosophy or having credit for at least two one-semester courses in philosophy.” On page 113 Toulmin (2003) expresses a much better conception of formal validity: “to state all the data and backing and yet to deny the conclusion would land one in a positive inconsistency or contradiction.”

incorrect, conception flows from the logicians' one-sided interest in analytic arguments, which he thinks should not be regarded as exemplary for all arguments. Formal validity in the logical sense relates only to the way in which arguments are formulated and has, in Toulmin's view, nothing to do with the real sources of validity.

By means of yet another example, Toulmin elucidates the concept of an analytic argument (pp. 115–118):

1. Anne is one of Jack's sisters.
2. All Jack's sisters have red hair. So
3. Anne has red hair.

The major premise (2) can be rewritten as a warrant (2a) and as a backing (2b):
(2a) Any sister of Jack's will (i.e., may be taken to) have red hair.

(2b) Each one of Jack's sisters has (been checked individually to have) red hair.

Toulmin observes that the backing (2b) includes explicitly the information which is also present in the conclusion (3):

[...] indeed, one might very well replace the word "so" before the conclusion by the phrase "in other words," or "that is to say." (p. 115)

For this reason, Toulmin calls the argument *analytic*:

In such a case, to accept the datum and the backing is *thereby* to accept implicitly the conclusion also; if we string datum, backing and conclusion together to form a single sentence, we end up with an actual tautology. (p. 115)⁴³

Toulmin supposes that the backing in this example consists in the hair color of all Jack's sisters having been checked. But in that case, of course, Anne's hair has also been checked: in other words, the conclusion that Anne has red hair (3) goes no further than what has already been said in the premises.

In nonanalytic arguments – those which Toulmin calls "substantial" – the conclusion does contain new information. This becomes apparent, says Toulmin, if we change the Anne example as follows (2003, p. 117):

- (1') Anne is one of Jack's sisters.
- (2a') Any sister of Jack's may be taken to have red hair.
- (2b') All Jack's sisters have previously been observed to have red hair.

So

- (3') Presumably, Anne now has red hair.

The conclusion (3') has now been weakened by the qualifier "presumably," because in the meantime Anne's hair may have changed color or she may

⁴³ Toulmin is probably not using the word "tautology" here in the logician's sense, derived from Wittgenstein's *Tractatus*, of a statement that is true regardless of how the world is, but in the older sense, common in literary criticism, of a discourse in which a point is repeated.

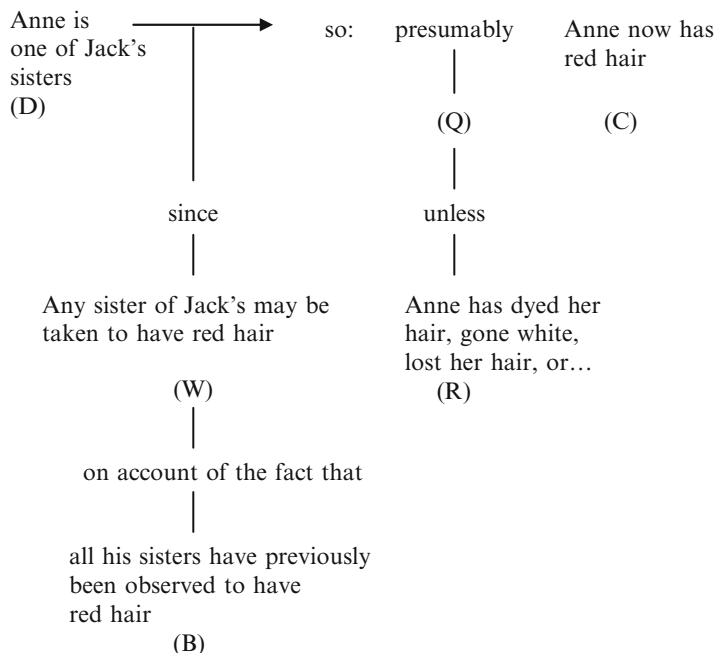


Fig. 4.6 Example of a nonanalytic but Toulmin-valid argument

have lost her hair. It is therefore necessary to make a reservation regarding the warrant (2a'):

(2a'') Unless Anne has dyed/gone white/lost her hair. . .

In this example, the backing (2b') no longer contains exactly the same information as the conclusion, but in Toulmin's view the argument is still valid (in the sense of establishing a presumption) because the warrant justifies the step from the datum (1') to the qualified claim (3'), acquiring its authority from the backing (2b'). See Fig. 4.6.

This example makes clear that substantial arguments, which are, according to Toulmin, by far the most prevalent in practice, can also be valid, albeit in a different way than analytic arguments. He also provides an explanation of why substantial arguments are more common in practice than analytic ones:

If the purpose of an argument is to establish conclusions about which we are not entirely confident by relating them back to other information about which we have greater assurance, it begins to be a little doubtful whether any genuine, practical argument could *ever* be properly analytic. (2003, p. 117)

Inasmuch as the conclusions of analytic arguments contain basically the same information as the premises, there is no uncertainty about the information contained in the conclusion. And therefore, says Toulmin, there is no need for an

argument at all.⁴⁴ Unlike analytic arguments, substantial arguments do make a contribution to the purpose of argumentation as Toulmin sees it.⁴⁵

By referring, once more, to the examples of Anne, Petersen, and Harry, the field-dependency of the validity of arguments and argumentation can also be illustrated. In the Anne example, one can imagine the warrant to be backed by checking the natural (original) color of all Jack's sisters' hair; in the Petersen example, by a national census (or by doing a survey); and in the Harry example, by checking the relevant laws (or consulting a publication summarizing the legal situation). For these things to be done properly, we should need first a chemist who is not color-blind (or a hairdresser knowledgeable of chemistry), then a demographer, and finally a lawyer. The arguments can, in principle, be equally valid. According to Toulmin, there is no reason whatsoever to regard them as being automatically less rational than analytic arguments or to go even so far as to call them irrational.

In Toulmin's view, the idea that there are universal criteria of validity can be upheld only if validity is conceived only as a formal property of analytic arguments, as happens in standard logic. Toulmin concludes that it is the reluctance to drop this conception of validity that has made logic insignificant for the evaluation of arguments as they actually occur in practice.

4.8 Appropriations of the Toulmin Model

When *The Uses of Argument* was published in 1958, in the philosophical journals little or no attention was paid to the model, and the opinions that were expressed concerning the rest of the book were predominantly negative. However, as Toulmin (2006) points out, soon after its publication, the model was picked up by communication scholars in the United States (see Sect. 8.2 of this volume) and became a very

⁴⁴ According to Hitchcock (personal communication), this claim is false. It is sometimes not at all obvious that information contained in the premises of a formally valid argument includes the information in the conclusion. For example, it took Bertrand Russell's letter to Gottlob Frege in 1902 to show that the Basic Law V in his *Grundgesetze* (published in 1893) contained a contradiction. In fact, according to Gödel's incompleteness theorem (whose proof was published in 1931), any consistent axiomatization of arithmetic has information in the axioms that *cannot* be gotten out of them by the rules of inference in the underlying logic. In Hitchcock's view, Toulmin's skepticism regarding the power of formally valid reasoning is certainly not justified. Mathematical proofs sometimes have surprising conclusions, yet are analytic in any defensible sense of that concept.

⁴⁵ In personal communication Hitchcock explained that Toulmin's skepticism about analytic arguments is not justified. Mathematical proofs sometimes have surprising conclusions, yet are analytic in any defensible sense of that concept. Examples are the proofs that the diagonal of a square is incommensurable with its side, that the square root of 2 is irrational, that no consistent axiomatization of arithmetic is complete, that there is no mechanical decision procedure for the logic of the quantifiers "all" and "some," that there are only five regular solids (Toulmin 1976, p. 67; cf. Aberdein 2006, pp. 332–334), and so on. Given Toulmin's first degree in mathematics and physics, Hitchcock finds his blindness to the power of formally valid reasoning hard to understand.

popular practical device for analyzing and constructing arguments in argumentation and debate courses. Since then, a lot of things have changed in the reception of Toulmin's work, both among theoretically minded argumentation scholars with a background in communication and among argumentation scholars with a background in philosophy and logic.⁴⁶

To start with, in the United States *The Uses of Argument* has become a source of inspiration for theorizing about argumentation in communication studies and rhetoric. This has resulted, among other things, in the development of the "rhetoric of enquiry" movement (see Sect. 8.5) and in further theoretical reflection upon argument fields and argument spheres (see Sect. 8.6).

An important appropriation of the Toulmin model in communication studies and rhetoric is proposed by G. Thomas Goodnight, who reacts to Habermas's (1981) objection that Toulmin's field analysis cannot differentiate between essential and accidental features of a field in authorizing a warrant. According to Goodnight (2006), Habermas objects that Toulmin does not draw the proper lines between, on the one hand, accidental institutional differentiations of argumentation and, on the other hand, the forms of argumentation determined by internal structure (p. 35).

In his theory of communicative rationality, Jürgen Habermas (1981) leaves Toulmin's field theory behind and introduces, starting from the types of claims, his alternative system of classification that differentiates between argumentation in theoretical, practical, aesthetic, therapeutic, and explicative discourse and critique. In defense of the Toulminian classification system, Goodnight argues, contra Habermas, that argumentation is best served by repairing Toulmin's approach rather than abandoning his field-grounded reasoning. Because, in Goodnight's view, the Toulmin model is missing a required critical component, he offers a "legitimation warrant" as an addition (p. 40). This warrant relates to the justification of a decision to ground a particular argument in a field, which Goodnight calls a *legitimation inference* (Goodnight 1993). Goodnight envisages a classification in terms of legitimation inferences.

In philosophy, Toulmin's work has also been of influence on the rise of informal logic,⁴⁷ and since the late 1980s his model has been taken up in the theorizing (see Chap. 7, "Informal Logic" of this volume). Like Toulmin, informal logicians tend to hold the view, albeit not always for the same reasons, that formal logic does not constitute the best, and certainly not the only, tool for analyzing and evaluating argumentation.⁴⁸ Several argumentation theorists with a background in informal

⁴⁶ Loui (2006), who emphasized the influence that Toulmin's ideas have had, reports that *The Uses of Argument* is Toulmin's most cited work and that citations in the leading journals in the social sciences, humanities, and science and technology put Toulmin among philosophers of science and philosophical logicians in the top 10 of the twentieth century.

⁴⁷ In citing the influences that have led to the rise of informal logic, Johnson and Blair (1980) explicitly mention the Toulmin model.

⁴⁸ As is explained in Sect. 7.2 of this volume, Toulmin's radical critique, and the new perspective on argumentation he provided, has been an inspiration to explore this territory with other models and instruments than those supplied by formal logic.

logic, such as James Freeman (1985, 1988, 1991, 1992), Mark Weinstein (1990a, b), and David Hitchcock (2003, 2006a), have scrutinized Toulmin's philosophical ambitions and have appropriated his model.⁴⁹ They view his ideas as useful contributions to the project of developing theoretical tools for the analysis and evaluation of argumentation. In this section, we shall describe some philosophically oriented responses which involve appropriations of the Toulmin model.

A relatively early constructive attempt at appropriation comes from Healy (1987), who takes Toulmin's model to be structurally adequate but lacking. He proposes to extend it to take care of these limitations. Freeman (1991), who starts from Toulmin's ideas in his theorizing, is among the various argumentation scholars who say that Toulmin warrants can be expressed in the form: *if D, then C*, where D stands for the data and C is the claim (p. 53). Hitchcock (2003, 2006a), another Toulmin expert, denies that a warrant is a non-generalized indicative conditional. He believes that for Toulmin a warrant never has the form *from these data, you may take it that this claim is true*. Instead, a warrant always has the following generalized form: *"from data of this kind, you may take it that a corresponding claim of this sort is true."* In Hitchcock's view, a warrant is, as it were, an inference-license.

Hitchcock is an advocate of the use of the Toulmin model for the analysis and evaluation of argumentation. In his discussion of the model, he focuses in the first place on the function of the data (grounds) and the warrant as an alternative to the traditional way of modeling inferences by formal argument patterns of premises and a conclusion. If an argument functions to justify a statement by providing grounds in its support, we may just as well call these grounds "reasons" or "data" for a "claim," instead of retaining the traditional labels of "premises" and "conclusion." Implicit in any such an argument is that the claim follows from the grounds. It does so, if and only if some justified covering generalization of the argument holds, possibly qualified as holding "generally" or "presumably." According to Hitchcock (2003), such a justified covering generalization is what Toulmin means by a "warrant."⁵⁰ A warrant, then, is a general rule which licenses or permits a step from grounds of a certain sort to a corresponding claim.

Toulmin's justification for distinguishing warrants from the other components of argumentation is that they are all responses to different kinds of questions from

⁴⁹ A recent interest in the Toulmin model was instigated by David Hitchcock, who dedicated an OSSA Conference he organized at McMaster University in May 2005 partly to the Toulmin model. Rather than concentrating on a critical evaluation of the Toulmin model, the papers focused on providing interpretations of elements of the model that are not sufficiently clear, revaluing elements that deserve more attention, and proposing necessary additions (see Hitchcock and Verheij 2006).

⁵⁰ According to Hitchcock (2003), "Toulmin equivocates on whether a warrant is a statement or a rule, often within the space of two pages" (p. 70). Hitchcock believes this equivocation to be harmless since a warrant-statement is the verbal expression of a warrant-rule.

a challenger. The warrant corresponds, according to Hitchcock, to the concept of argument scheme derived from the work of Perelman and Olbrechts-Tyteca.⁵¹ In Hitchcock's view, which differs from how Toulmin is interpreted by some others, "the warrant is not part of the analysis of an argument, not something to be included in its diagramming" (2003, p. 79). According to him, identification of the warrant is part of the *evaluation* of the argument, because questions about an argument's warrant arise when one comes to judge it, in particular when one is out to assess whether the conclusion of the argument follows from its stated premises. The question then is not "How do you get there," but "How might you get there?" And next: "Is one of the ways you might get there a reliable route?" In other words, there may be several candidates for warrants. If one of these candidates proves to be justified (by a backing), then we can say that the inference is indeed warranted.

Hitchcock (2003) points out that several criticisms of the Toulmin model by other authors are – in his view – based on misconceptions. In reacting to these misconceptions, he gives three crucial responses: (1) A warrant is not a kind of premise. (2) A warrant is not a kind of implicit premise. (3) A warrant is not an ungeneralized indicative conditional.

According to Hitchcock (2003), in spite of what Toulmin suggests, the data and warrant should not be seen as two different types of premises. Only Toulmin's data are premises in the traditional sense: "The claim is not presented as following from the warrant; rather it is presented as following from the grounds, *in accordance with* the warrant. A warrant is an inference-licensing rule, not a premise" (Hitchcock 2003, p. 71). This interpretation also means that a warrant is not an implicit premise either. Toulmin himself maintains that warrants are implicit, but Hitchcock stresses that there is a vital difference between calling an implicit component of an argument a "warrant" and calling it a "premise." According to Hitchcock – and here his position is fully in line with that of others – it is not their implicitness which distinguishes warrants from grounds (data), but their functional role. In Hitchcock's opinion, "The implicit-premise approach assumes that a good argument must either be a formally valid argument, or a modally qualified formally valid argument, or a formally inductive strong argument, or an argument possessing some other sort of formal connection adequacy" (2003, p. 72). He sees that as going against Toulmin's claim that arguments which intuitively strike us as quite respectable are not formally correct:

⁵¹ In making this comparison it should be noted that if the warrant is viewed as a bridging premise (different from Hitchcock's interpretation), it is only a part of the argument scheme. This does not mean, of course, that warrants cannot be used to categorize argument schemes. As far as Perelman and Olbrechts-Tyteca's notion of argument scheme is concerned, it should be noted that this notion is rather loose. Some of the associative argumentative schemes they distinguish do not seem to represent a general rule. See Sect. 1.3 of this volume for the notion of argument schemes.

To reconcile their intuitive respectability with the assumption that a good argument has a formally adequate connection between premises and conclusion, the fiction of an implicit premise [...] is invented. And the problem becomes one of discovering something that it is not there. In particular, if one seeks an implicit premise whose explicitation will produce a formally valid argument, then it can be proved that any such implicit premise will be at least as strong as the proposition that it is not the case that the premises are true and the conclusion false. But this proposition, though a logical minimum, is less strong than the implicit assumption which sophisticated argument analysts attribute to arguments. So one resorts to ad hoc advices to explain and predict this stronger assumption. (Hitchcock 2003, p. 72)

Rather than an implicit premise, the Toulmin warrant is in Hitchcock's view the expression of a rule used to infer the claim from the data; it is general because it is a rule.

Another difference between regarding the implicit assumption as an implicit premise and regarding it as a warrant is, according to Hitchcock, that when one searches for an implicit premise, "one assumes there is a unique answer to one's question" (2003, p. 73).⁵² When one takes the warrant approach, one does not need an assumption of a unique answer to the search for what is implicit in the inference of a conclusion from the explicit grounds made in an argument. There might be a variety of possible warrants. If it is not possible to ask the author of an argument "How do you get from your grounds to your claim?" it is better to construe the question as "How might you get there?" The question then is whether any of the possible warrants is an established warrant, i.e., whether the step from grounds to claim is justified (2003, p. 73).

Following Toulmin and Hitchcock, Robert Pinto (2006) takes warrants to be material inference rules.⁵³ Because the inferences that are made in argumentation are of a material nature rather than fully dependent on logical form, he proposes to view warrants as generalized rules of inference that are epistemological, rather than logical. Since a conclusion is warranted when the data provide adequate reasons for accepting it, he shifts the focus from "truth-preservation" to "entitlement-preservation."⁵⁴ In the end, this move amounts to replacing a concern with logical truth by a concern with epistemic attitudes. The authority of the warrants depends, in Pinto's view, on the objective likelihood of reaching "good" outcomes and is therefore not necessarily field-dependent.

When one attempts to deploy a notion of "rules of inference" according to which rules of inference are not logical truths, three questions arise: (1) What form should the statements expressing such rules take? (2) What virtues must arguments and inferences have if they are to be considered valid? (3) What virtues must rule statements have if they are to have normative force? Based partly on Hitchcock's ideas concerning good rules of inference, Pinto comes up with a

⁵² This is, by the way, certainly not the position advocates of identifying implicit premises, such as the pragma-dialecticians, generally take. See, for instance, Sect. 10.5 of this volume.

⁵³ For Pinto's contribution to argumentation theory, see also Sect. 7.6 of this volume.

⁵⁴ According to Pinto, an argument (or inference) is valid only if it is entitlement-preserving.

set of criteria for entitling warrants. Basically, a reliable warrant is one that licenses a reliable inferential practice.⁵⁵

Lilian Bermejo-Luque (2006) proposes a new conception of the warrant.⁵⁶ Unlike Hitchcock, she takes the warrant to represent the inference claim of the speech act of arguing. Following Grennan (1997), Bermejo-Luque comes to the conclusion that inference claims are not explicit in acts of arguing. She construes the inference claim as the conditional whose antecedent is the conjunction of the reasons that are advanced and whose consequent is the conclusion.

As assertive speech acts, inference claims are put forward with a certain pragmatic force,⁵⁷ which corresponds with the way in which the conclusion is qualified by the arguer. An argument like "This is red; so, necessarily it is colored," for example, would have as its warrant "If this is red, then it is colored." Because in this case the conclusion has been qualified with "necessarily," we can take it that the arguer is putting forward this conditional as a necessary truth. If the pragmatic force with which an inference claim is put forward happens to be the pragmatic force with which that conditional must be put forward, as in the example, then, according to Bermejo-Luque, the argument will be valid. A valid argument, in other words, is in this view an argument whose warrant has been correctly qualified.

In suggesting that we should interpret the warrant as the corresponding conditional, Bermejo-Luque arrives at a rather different view of the warrant from Toulmin's. The inference claim, she observes, is not a justification of the step from reason to claim, but the way in which we make this step explicit. In her view, inferences are justified by backings, not by warrants.⁵⁸

Bermejo-Luque argues that epistemological relativism is not a necessary consequence of Toulmin's model. She analyzes the role that fields are to play in Toulmin's model. As she tries to show, a misconception of field-dependency gives rise to an unacceptable relativism with regard to argument appraisal. Fields do not actually provide standards to determine the way we assess arguments, but only a point of departure for assessing them. In her view, the standards for assessing arguments are determined by the constitutive correctness conditions of acts of arguing as illocutionary acts, and these are field-independent. Fields provide nothing but particular ascriptions of qualifiers to the reasons and inference claims constituting certain arguments. If an argument belongs to a particular field, then we can adopt that field's ascriptions of qualifiers in assessing it, that is, in order to

⁵⁵ By elaborating a suitable concept of *reliability*, Pinto tries to capture what gives warrants their normative force.

⁵⁶ For Bermejo-Luque's contribution to argumentation theory, see also Sect. 12.13 of this volume.

⁵⁷ The term *pragmatic force* used by Bermejo-Luque corresponds, roughly, with the degree of strength of the illocutionary point as defined by Searle. Inference claims are assertives, but they may have different degrees and types of strength.

⁵⁸ In Bermejo-Luque's view, bridging the gap between reason and conclusion by justifying the inference by means of a warrant, as Hitchcock and Pinto envisage, leads to an infinite regress. She attempts to avoid the regress by pointing out that backings justify inferences.

determine whether the ascription of qualifiers made by the arguer is correct in view of what is considered to be true, necessary, possible, (more or less) probable, plausible, etc., in that field.

In the textbook coauthored by Rieke and Janek, Toulmin uses the model he introduced in *The Uses of Argument* also for the purposes of evaluation (Toulmin et al. 1979). Hitchcock (2006a) points out that the Toulmin model is a tool for evaluating micro-arguments arising in a process of justifying claims which articulate one's prior beliefs. How someone might adopt a belief in the first place is a question Toulmin (2003) does not deal with. Following on from Toulmin, Hitchcock proposes epistemic criteria that are necessary for good (justified) reasoning: the grounds must be justified and adequate, the warrant must be justified, and the arguer must be justified in assuming that no defeaters apply. These criteria help in differentiating between "presumption-creating" and "presumption-defeating" critical questions, while in an argument scheme approach, these two kinds of critical questions are lumped together.

Another appropriation of the Toulmin model aimed at argument evaluation is proposed by Bart Verheij in the field of argumentation and artificial intelligence. Verheij (2003, 2006) gives his own reconstruction of the model and argues that, compared to the traditional premise-conclusion model, the Toulmin "scheme" enriches argument analysis. In line with recent research on defeasible argumentation (p. 181), he interprets the rebuttal – which can be applied to all elements of this amended Toulmin model – as a possibility to render a claim unsupported or defeated, in spite of the data in its support. He then extends this interpretation with a treatment of the formal evaluation of arguments in terms of their assumptions. See Sect. 11.5 of this volume for further discussion of Verheij's contribution.

4.9 Applications of the Toulmin Model

Toulmin's insights concerning argumentation are applied by a large group of scholars from a variety of academic backgrounds. In some cases they have adopted his general approach, in other cases they have taken up specific elements of his views. Most influential in applying Toulmin's insights has been his concept of "argument field," with the views on context-dependency that go with it,⁵⁹ and his model of argumentation. In American communication studies the concept of argument field has been adapted in various forms by authors such as Charles Willard (1983, 1989), who has a sociological conception, and Thomas Goodnight (1982), whose appropriation of the Toulmin model we already

⁵⁹ Contrary to the argumentation scholars from the American communication community who build on Toulmin's ideas concerning field-dependency, several philosophers from the informal logic community firmly reject them (e.g., Freeman, Hitchcock, Johnson, and Pinto).

discussed in [Sect. 4.8](#).⁶⁰ In this section we shall concentrate primarily on the various applications of the Toulmin model.

Starting in the early 1970s, a great many authors have made an effort to apply the Toulmin model to the analysis of argumentative discourse in specific fields, most notably linguistic studies (e.g., Botha 1970; Wunderlich 1974); the interpretation of texts (Huth 1975), in particular literary texts (Grewendorf 1975); and the field of law (e.g., Pratt 1970; Rieke and Stutman 1990; Newell and Rieke 1986). The model has also been related to theories of truth and rationality (Gottlieb 1968; Habermas 1973, 1981), to the study of argumentation and communicative action (Kopperschmidt 1989), and to the examination of dialectical argumentation (Healy 1987; Freeman 1992).

Some authors have linked the Toulmin model with mental processes playing a part in convincing (e.g., Cronkhite 1969; Reinard 1984; Voss et al. 1993). An interesting application in the field of psychology can be found in Voss (2006), who lists the various ways in which he uses the model in his psychological research (p. 303). Voss reports an empirical study in which an amended version of the Toulmin model is employed to examine the resolution of ill-structured problems by experts. To cope with the complexity encountered in the expert protocols that were studied, he proposes six amendments to the Toulmin model to allow for recursive composition. This is what the amendments amount to: (1) data can be claims in their own right; (2) an implicit warrant is present in every argument; (3) the backing can be an argument; (4) a rebuttal can have a backing; (5) the rebuttal can be an argument; and (6) qualifiers can be arguments. In Voss's study, virtually no explicit statement of a warrant was recognized as such, and distinguishing between data and backing proved to be difficult. While the Toulmin model did appear to facilitate the isolation of lines of argument, it did not constitute a proper model of the process of problem-solving.

Several authors have used the concept of warrant in order to classify processes of reasoning or argumentation. Among them are the communication scholars Arthur Hastings, Wayne Brockriede, Douglas Ehninger, and Jimmie D. Trent. We shall discuss some of their applications of the Toulmin model in some more detail.

Hastings (1962) proposed a new classification of the forms of reasoning traditionally distinguished in argumentation and debate textbooks (see [Sect. 8.2](#) of this volume). Starting from the Toulmin model, he describes and classifies the most important types of warrants in terms of the reasoning process, "moving from the data to the conclusion on the authority of the warrant" (p. 210). Hastings distinguishes nine processes of reasoning, in which he recognizes three general patterns: "verbal reasoning," "causal reasoning," and "free floating forms of reasoning." Just like in the debate handbooks, in his study evaluative questions are formulated for each of the forms of reasoning.

⁶⁰ Their contributions to argumentation theory are further discussed in [Sect. 8.6](#) of this volume.

According to Hastings, in *verbal reasoning* the step from data to claim is in one way or another based on the meaning of the terms used in the argumentation: “They are based upon symbolic formulations that exist in the language and the people because of semantic reinforcement” (1962, p. 139). In *reasoning from example to a descriptive generalization*, a general statement is justified by a premise in which a reference is made to one or more specific facts or situations (“The increase of muggings indicates that our society gets more violent every day”). In *reasoning from criteria to a verbal classification*, a person or situation is characterized on the basis of certain properties (“Maxwell is smart because he is good in math”). In *reasoning from definition to characteristics*, an event or situation is defined in a certain way, and, on the basis of this definition, either attributes or characteristics of the event or logical implications are drawn.

A common characteristic in causal reasoning is that the warrant consists of a causal generalization. In *reasoning from sign to unobserved event*, an observed or known event is taken as an indication of the existence of an unobserved event. The unobserved event is the cause of the observed event. In *reasoning from cause to effect*, a certain event is predicted on the basis of the existence of another event. Like reasoning from sign to unobserved event, *reasoning from circumstantial evidence to hypothesis* is argumentation from effect to cause. In this case, a series of indications is put forward to show that the hypothesis mentioned in the claim is true.

Free-floating forms of reasoning include *reasoning from comparison*, *reasoning from analogy*, and *reasoning from authority*. With these forms of reasoning, it is not possible to give a general characterization of the warrant, as is possible with the other two main categories. Also, these three forms of reasoning are not linked to a specific type of conclusion.

Hastings’s “reformulation” is not adopted in the major textbooks on debate, except for the textbook he later published with Russel Windes (Windes and Hastings 1969).⁶¹ In contrast, the Toulmin model that inspired Hastings did receive a lot of attention in practical literature on the skills of arguing, debating, discussing, and speaking. The model can be found in numerous textbooks on communicative skills. Most of these appeared in the United States and are inspired, as far as the application of the Toulmin model is concerned, by Douglas Ehninger and Wayne Brockriede’s (1963) textbook *Decision by Debate*.⁶² Ehninger and Brockriede’s adaptation of Toulmin’s model led to the widespread adoption of the model in practical textbooks on argumentation.

The foundations for their influential textbook on debating were laid by Brockriede and Ehninger in an article they published in 1960 (Brockriede

⁶¹ Hastings’s classification, however, is used as a point of departure by other scholars, such as Kienpointner (see Sect. 12.7 of this volume) and Schellens (see Sect. 12.8 of this volume), in their theorizing.

⁶² Ehninger and Brockriede (1963) use the terms *evidence* and *reservation* instead of the terms *data* and *condition of exception or rebuttal*.

and Ehninger 1960). In this article they first gave an interpretation of the Toulmin model and then applied it to the construction of a system for classifying sorts of argumentation. Generally speaking, Brockriede and Ehninger endorse Toulmin's criticism of logic. They conclude that the Toulmin model is better suited to the description, analysis, and evaluation of argumentation than the logic-based methods usually employed in textbooks on argumentation. They see the Toulmin model as an alternative that is more in tune with actual practice.

Brockriede and Ehninger interpret Toulmin's model as a *rhetorical* model, which is reflected in their classification of sorts of argumentation. This classification goes back to the Aristotelian tripartition of means of persuasion based on *logos*, *pathos*, and *ethos*. The first type they call *substantive*, the second *motivational*, and the third *authoritative*. The differences between these three forms of argumentation, say Brockriede and Ehninger, must be looked for in the nature of the *warrant* in the Toulmin model. In a *substantive* argument, the warrant tells us something about the way in which "the things in the world about us" relate to one another. In a *motivational* argument, it tells us something about the emotions, values, desires, or motives which can make the claim acceptable to the person to whom the argument is addressed.⁶³ In an *authoritative* argument, it says something about the reliability of the source from which the data are drawn.⁶⁴

Let us have a look at an example of each type, taken from Ehninger and Brockriede's (1963) *Decision by Debate*. The authors distinguish between various sorts of *substantive* argumentation. An example of the first of these is "The price of steel has gone up, therefore the price of products made from steel will probably rise." This argumentation, which involves arguments in which a *causal* relationship is defined, is shown in Fig. 4.7.

⁶³ Kock (2006) argues that the typology of warrants concerning practical claims that stems from Brockriede and Ehninger is insufficient for pedagogical applications. In his essay "Multiple warrants in practical reasoning," he maintains that the singleton set of the "motivational" warrant should be extended and refined. The resources for the extension and refinement, he holds, can be found in the ancient rhetorical handbook *Rhetorica ad Alexandrum*. On the basis of this handbook, Kock arrives at a taxonomy of warrants "invoked in arguing about actions" (p. 254). When it comes to actions in general, the warrants can be based on the following categories: (1) just (*dikaia*), (2) lawful (*nomina*), (3) expedient (*sympheronta*), (4) honorable (*kala*), (5) pleasant (*hēdeia*), and (6) easy of accomplishment (*rhaidia*). For more difficult actions the warrants may be based on the following two categories: (1) practicable (*dynata*), and (2) necessary (*anankaia*) (p. 255).

⁶⁴ Brockriede and Ehninger's definition of substantive, motivational, and authoritative argumentation is slightly different from the classical tripartition into *logos*, *pathos*, and *ethos* discussed in Chap. 2, "Classical Backgrounds" of this volume. This is particularly true of authoritative argumentation, classical rhetoric being exclusively concerned with the *speaker's* reliability and good character. It might be useful to add that in his *Rhetoric* Aristotle considers only *logos* as a means of persuasion by argument, while *pathos* and *ethos* are non-argumentative means (see Sect. 12.8 of this volume).

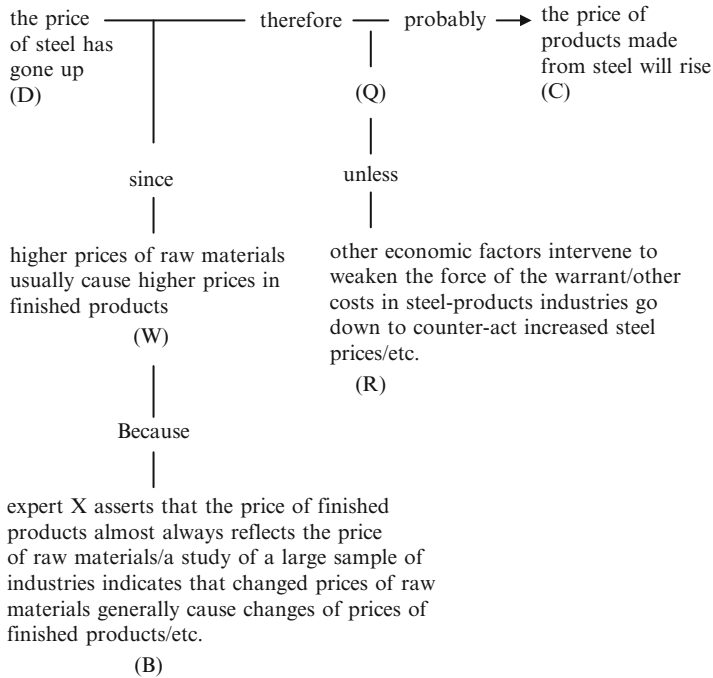


Fig. 4.7 Example of a substantive argument with a causal warrant

Examples of *motivational* argumentation and *authoritative* argumentation are:

Motivational Argumentation

Continued testing of nuclear weapons is needed for US military security; therefore, continued testing of nuclear weapons is desirable for the United States, since *the United States is motivated by a desire to maintain the value of military security*.

Authoritative Argumentation (our own example)

Stephen Hawking says that it is almost certain that alien life exists in other parts of the universe. That will probably be true, since *Stephen Hawking's views on the cosmos are authoritative*.

Another attempt to make Toulmin's model applicable in practice was made by Trent (1968). His interpretation of the model resembles Brockriede and Ehninger's, but has been much less influential. Trent, who claimed that Toulmin's layout of argument is essentially the same as the Ciceronian *epicheireme*, treats the Toulmin model as a *sylogistic* model. He refers to some authors (among them Manicas 1966) who regard the syllogistic nature of the model as a drawback, because it renders it unfit for the analysis of nonsyllogistic reasoning, such as *modus ponens*. Trent, however, does not find this limitation very serious. In his view, the vast majority of arguments occurring in practice are either syllogistic or can easily be reduced to syllogistic form, specifically in the practices of public speaking and debate.

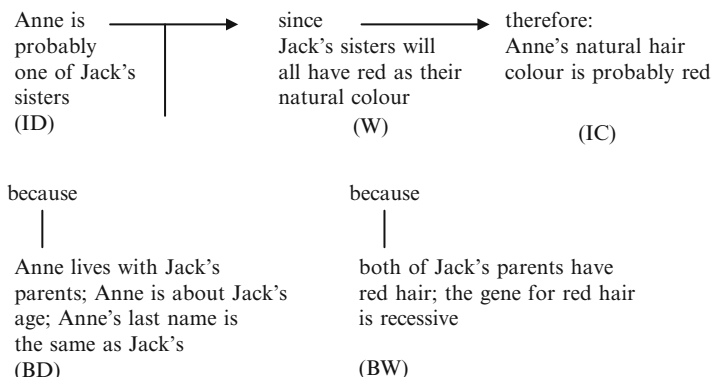


Fig. 4.8 Example of an inference epicheireme

According to Trent, the great advantage of the Toulmin model is the emphasis it puts on *material* rather than *formal* validity, which is more in line with everyday practice. Still, he regards the model as incomplete and hence inadequate to evaluate the material validity of arguments. By modifying the model, he tries to remedy this drawback before applying the model. First, he extends the model by including a backing, a qualifier, and a rebuttal in the data, in addition to the backing, qualifier, and rebuttal that in the Toulmin model go with the warrant. This makes the model, in Trent's view, more complete and the source of (un)certainly of a claim can be more easily indicated. Second, he distinguishes between three groups of argument types, which he calls *epicheiremes*: *selection* epicheiremes, *inference* epicheiremes, and *rhetorical* epicheiremes. In a selection epicheireme, the claim is selected from the backing by the warrant; in an inference epicheireme, it is inferred from data or warrant; and in a rhetorical epicheireme, it is guaranteed by the authority of the speaker.⁶⁵

Trent illustrates the differences among these three categories of epicheiremes by reference to Toulmin's Anne example. Still, it is not quite clear what exactly he has in mind; except perhaps in the case of the inference epicheiremes, which we shall take as our example. See Fig. 4.8.

In this example, the inference claim (IC) cannot be asserted with absolute certainty because there is a qualifier added to the inference datum (ID). The uncertainty regarding the datum has its cause in the backing for the datum (BD). However, the backing for the warrant (BW) does allow an absolute warrant.

Trent sees his own extension of the model, but also Brockriede and Ehninger's interpretation of it, as an attempt to bring logic closer to the practice of argumentation. This was also Toulmin's purpose in *The Uses of Argument*, although Toulmin argues that for accomplishing this task a radical reorientation of logic is needed.

⁶⁵ A rhetorical epicheireme resembles Brockriede and Ehninger's authoritative argumentation, which is a rhetorical means of persuasion based on *ethos*.

Toulmin's exposition of the model, in fact, is intended to show that micro-arguments are generally substantial in the sense that the data and backing on which they ultimately rest do not jointly entail the conclusion and that the criteria for evaluating argumentation are ultimately field-dependent.⁶⁶ Of course, this does not mean that the model cannot be used as a general model for the analysis of argumentation.

Various other authors have tried to use the Toulmin model as a general model for analyzing argumentation and also for teaching composition. Among the books in which the Toulmin book is used prominently in this way are *Argumentation and the Decision-Making Process* by Richard Rieke and Malcolm Sillars (1975), *Argumentation as Communication* by Richard Crable (1976), and *Argument: A Guide to Formal and Informal Debate* by Abné Eisenberg and Joseph Ilardo (1980).⁶⁷ The list of textbooks also includes *An Introduction to Reasoning*,⁶⁸ which Toulmin coauthored with Richard Rieke and Allan Janik (1979).⁶⁹ In the preface of this textbook, the authors state explicitly:

The “basic pattern of analysis” set out in Part II of this book [including all the elements of the 1958 model] is suitable to arguments of all types and in all fields. (p. v)⁷⁰

It is striking that most authors who used Toulmin's model as a general model for argumentation analysis – again, including Brockriede and Ehninger, Trent, and Toulmin himself 20 years later – ignore the logical ambitions Toulmin intended his model to serve with regard to the replacement of formal validity in the geometrical sense by validity in the Toulminian procedural sense. In the way in which the model is in practical textbooks used for analyzing and constructing arguments, it is completely isolated from its philosophical starting points. Toulmin's (related) field-dependence thesis however, regarding how the implementation of the argumentative procedure varies according to the goals of the various fields, is taken up widely. In the textbook by Toulmin, Rieke, and Janik (1979), a whole part (IV) is devoted to “special fields of reasoning”: “legal reasoning,” “argumentation in

⁶⁶ In this way Toulmin counters the skepticism in British analytic philosophy of the 1960s about general claims, psychological claims, and moral claims. This part of the Toulmin case stands even if one rejects the claim that warrants can neatly be assigned to fields that can be identified with academic disciplines.

⁶⁷ Also outside the United States the model is used in several textbooks, for example, in Schellens and Verhoeven (1988) (see [Sect. 12.8](#)).

⁶⁸ In their textbook, Toulmin, Rieke, and Janik (1979) use the term *grounds* instead of *data*, clarify the concept of a warrant, and include five chapters on argument in specific fields (law, science, the arts, management, ethics) in which they exemplify Toulmin's (1992) point that it is not just the warrants and backings that vary from field to field.

⁶⁹ It is noteworthy that, unlike other authors before them, Toulmin, Rieke, and Janik (1979) do not present a general taxonomy of warrants or argument schemes.

⁷⁰ In various reviews of *The Uses of Argument*, it is rightly assumed that Toulmin regards his model as generally applicable. Cowan, for one, writes: “This pattern has, according to Toulmin, the necessary scope to encompass all arguments” (1964, p. 29).

science,” “arguing about the arts,” “reasoning about management,” and “ethical reasoning.”⁷¹

Nevertheless there have been some exceptions to this oversight. When they are surveying some important theories of argumentation in their *Argumentation and the Decision-Making Process*, Rieke and Sillars (1975) give a brief summary of the wider framework within which Toulmin's view of argumentation is to be placed (pp. 16–19). And in Crable's (1976) *Argumentation as Communication*,⁷² too, at various places something of this broader context can be found.⁷³ Yet even in these two books, the application of the model is separated from Toulmin's radical views on logic.

A striking example of a linguistic application of the Toulmin model is the way in which the Italian-Dutch linguist Vincenzo Lo Cascio connects the treatment of argumentation with Chomskyan generative grammar. Starting from the assumption that argumentative discourse is a form of language use governed by underlying syntactic rules, Lo Cascio (1991, 2009) proposes an argumentative grammar which links clauses, or chains of clauses, that have a specific function in the discourse. The syntactic rules of this grammar are to some extent language specific.

Speakers who aim to persuade their audience of the truth or acceptability of a standpoint can shape their message in a variety of ways. The different ways of organizing an argumentative message linguistically Lo Cascio calls “profiles.” Every speaker of a language has to learn how to form the profiles allowed by that language and how to use these profiles properly in communicative situations. The use of profiles is governed by pragmatic rules.

The grammar that Lo Cascio envisages defines the syntactic rules, categories, and linguistic conditions underlying well-formed argumentative texts and profiles. Starting from the Toulmin model, he proposes a set of categorical rules and formation rules for textual argumentative profiles. The hierarchical level of the categories and the arrangement of functional categories, such as “data,” “warrants,” and “claims,” in argumentative chains are made explicit in formation rules. Drawing a distinction between “main” categories and “optional” categories, Lo Cascio indicates the hierarchical status of the categories that can play a role in an argumentative text. He then defines the syntactic tools available for enchainning these categories and formulates rules that establish the order in which they can appear.

The first two obligatory categories in an argumentative text are the “opinion” (*O*) and the “justification” or support (*JS*), which is composed of an argument (*A*) and a “general rule” (*GR*). Together, *JS* and *O* form the complex “argumentation”

⁷¹ This part of Toulmin, Rieke, and Janik (1979) underlies Toulmin's remark quoted in Sect. 4.7 from his keynote speech at the 1990 ISSA conference about how he would expand his description of the field-dependence of argumentation if he were to write *The Uses of Argument* again.

⁷² Like Ehninger and Brockriede (1963), Crable (1976) uses the terms *evidence* and *reservation* to refer to the data and the rebuttal.

⁷³ This may be no surprise, since Crable (1976) refers to Toulmin as his “most profound influence” and “a source of challenge and insight” (p. vi).

node (*ARG*). *JS* can consist of a single argument (*A*), but also of more than one argument – which, in turn, can be supported by a sub-justification. In other words, the argumentation can be simple or complex and can have a multiple or a subordinative structure.

The third obligatory argumentative component is the “warrant”: the general rule (*GR*) which allows an argument to be considered as a good support for a thesis. This component is obligatory only at a deep structural level; it is semantically always implied, without necessarily being mentioned or lexicalized in the text.

Each argument is supported and justified by a different general rule. Consequently, in a well-formed argumentative text, the same general rule can appear only once.

The grammar proposed by Lo Cascio is recursive. Every argument, or sub-argument, can be expanded in a sub-argumentation such that the node *A* can be rewritten as *ARG*, on the condition that the new thesis/opinion *O* is co-indexed with the argument *A* of the superior argumentative node *ARG* and, in turn, supported by an argument *A2*.

Optional categories in the argumentative structure are the “qualifier” (*Q*), which is the modal marker, and the “backing” (*B*), the authorizing source of the information. Both have the function of *specifiers*. To every argument *A* or opinion/thesis *O*, or even to a General Rule *GR*, a qualifier can thus be added in the form of a modal verb, adverb, or some other modal form. The “backing” (*B*) functions as support, as source or guarantee, for the *GR*, the general rule. Three other optional categories are to be considered as adjuncts to the argumentative high node *ARG* and have a counter-argumentative value – they function as “reinforcers,” “rebuttals,” and “alternatives” – or a peripheral attributive value, their function is to give more precise information, to make restrictions, or to attach conditions.

Lo Cascio’s theory has been extended with a textual analysis in which particular attention is paid to the relationship between argumentation and narration (Lo Cascio 1995, 2003, 2009). In Lo Cascio’s view, these two types of discourse have many points in common and can very often be found alongside each other. Narration relates to two main categories: event (*E*) and situation (*S*). Event is formed by a closed time interval, while situation is formed by an open time interval. The time interval *S* always includes the time interval *E*. A situation which marks a given event is intended to characterize the world to which that event belongs. Take the following sentence:

John was tired and thirsty and he entered a bar and asked for a glass of water.

In such a sentence, the world where John is “tired and thirsty” (situation) characterizes and contains the events “enter a bar” and “ask for a glass of water” and justifies at the same time the action of entering a bar to drink something. It can be supposed that the decision of entering a bar can in this sentence be explained by John’s being tired and thirsty. So the situation (being tired and thirsty) functions as a justification for the event (entering the bar). The difference between the narrative and the argumentative reading would then be the modal value which would be assigned to the relationship between the two components, and operates in particular

on the event (i.e., the supposition that being tired can have influenced the decision to enter a bar).

According to Lo Cascio, narration is very close to argumentation. However, while narration presents events and situations as certain, argumentation presents situations and events as possible. Therefore, Lo Cascio proposes a link, although a very speculative one, between “event” and “claim,” on the one hand, and “situation” (or event) and “argument” (justification), on the other (Lo Cascio 1995, 2003, 2009).

Another sphere in which Toulmin's model and his philosophical ideas about argumentation, in particular those about field-dependency and the epistemological nature of the evaluation process, have had considerable influence is the educational reform movement “critical thinking” (see Sect. 7.2 of this volume). This influence manifests itself, for instance, clearly in two books, *Critical Thinking and Education* and *Teaching and Critical Thinking*, published by John McPeck (1981 and 1990, respectively).

McPeck explicitly appeals to the Toulmin conception when arguing that field-invariant instruction in the standards of reasoning and argumentation is impossible because there are no such standards. He agrees with Toulmin that the standards of reasoning and argumentation are a function of the epistemology of the fields or disciplines concerned. The warrants that authorize the moves from data to claims are dependent on the prevailing epistemology. Therefore the correct way of learning how to argue about literature or about history is to learn the standards of literary criticism or of historiography. Learning to think critically, McPeck argues, requires getting to know the epistemology of each field. In some important respects McPeck's position has been taken up and extended by Weinstein (1990a, b).

In recent years, the Toulmin model has also been taken up and found a great number of applications in the field of artificial intelligence (AI) and computation (for further discussion of this important development, see Chap. 11, “Argumentation and Artificial Intelligence” of this volume).⁷⁴ John Fox and Sanjay Modgil (2006), to mention a striking example, report on their extension of the Toulmin model to facilitate computationally supported clinical decision-making. Because in clinical decision-making the Toulmin model proves to be quite useful, the basic characteristics of the model are retained in the account. “The idea of competing claims however, entails a need for decision making which requires some developments that Toulmin did not investigate, notably the idea of weighing arguments and aggregating them in order to arrive at an ordering over decision

⁷⁴ Prakken (2006) argues that, in its frequent use of an argument scheme approach, the field of artificial intelligence and law (AI & Law) has taken to heart some of the lessons of *The Uses of Argument*. It is also recognized that premises can play different roles (analogous to those of Toulmin's data and counter-rebuttal) and that arguments are defeasible. The field-related treatment of argument schemes confirms Toulmin's idea that the criteria for evaluating arguments differ from field to field. Prakken maintains that AI & Law has developed an account of the validity of reasoning that applies to every argument and is nevertheless formal and computational.

options” (Fox and Modgil 2006, p. 287). Another example is provided by Olaf Tans (2006) who has promoted a dynamic use of Toulmin's model, particularly the warrant, in dealing with legal argumentation in artificial intelligence.⁷⁵

In addition, elements of the Toulmin model have been applied in the development of a neural network-based resolution system for discretionary decision-making. John Zeleznikow (2006) reports on the use of the model in the development of software to enable pretrial Online Dispute Resolution.

There are various other applications of the Toulmin model in artificial intelligence. Andrew Aberdein (2006), for one, argues that in metamathematics argumentation is used quite similarly to how it is used in natural language. Toulmin's layout of arguments should be applicable to mathematics. The main value of the layout is the identification of any nonconstructive steps or flaws due to ambiguity within a proof. From the example of two apparently different layouts of the Four Color Theorem, Aberdein argues for the necessity of extending Toulmin's account of the rebuttal to include undercutting defeaters in the sense of Pollock.

Chris Reed and Glenn Rowe (2006) report on some interesting theoretical issues raised by their project of allowing automatic computer translation between Toulmin diagrams and the box-arrow diagrams inspired by Beardsley's (1950) *Thinking straight*. They use an extended version of the Toulmin model allowing for multiples of most elements in the original model and adding recursion. In contrast to Aberdein (2006), Reed and Rowe regard Toulmin's original notion of “rebuttal” akin to Pollock's “undercutting defeaters.”

Fabio Paglieri and Cristiano Castelfranchi (2006) use the model as a preliminary test to determine the possibility of covering belief revision with the same conceptual framework as is used in dealing with argumentation. Their starting point is that belief revision and argumentation are, respectively, the cognitive and the social side “of the same epistemic coin” (p. 306). Paglieri and Castelfranchi use the results of their research primarily to consider the problems that could come up when dealing with more elaborate argumentation theories. For further discussion of argumentation and artificial intelligence, see Chap. 11, “Argumentation and Artificial Intelligence” of this volume.

4.10 Critical Appreciation of Toulmin's Contribution to Argumentation Theory

Next to a great many positive reactions, Toulmin's philosophical writings have also met with a considerable amount of criticism. In the context of this volume, we shall confine ourselves to discussing the most prominent critical reactions

⁷⁵ According to Tans (2006), a warrant should be understood as an abstraction from the data, which gets refined dynamically by discursive testing of its authority. Tans supports his view by using examples from legal practice – i.e., within the context of the Supreme Court in the United States – and captures an alternative diagram of the Toulmin model in his exposé.

concerning his contribution to argumentation theory. They concern in the first place his model of argumentation and the ideas relating to the model Toulmin propounded in *The Uses of Argument*. After a brief reminder of the criticism Toulmin received on his approach to logic and his response to it, we shall concentrate on several points of criticisms concerning the model of argumentation he proposed as an alternative to the formal logical approach and the way in which he defines its components.

It is not surprising that Toulmin's radical attack on what he sees as standard formal logic has evoked strong criticism from logicians and other philosophers. Their reviews of *The Uses of Argument* almost combined in a concerted and passionate "defense of logic."⁷⁶ In the most favorable reviews (e.g., Abelson 1960–1961), there is some sympathy with Toulmin's efforts to improve the applicability of logic. Nevertheless, initially his suggestions were not well received by his fellow philosophers. In most reactions, the course he advocates is rejected.⁷⁷ In fact, the criticisms mainly concern his ideas concerning the form and validity of arguments (e.g., Castaneda 1960; Cowan 1964) and concerning probability (e.g., Cooley 1959; King-Farlow 1973).

In the preface to the paperback edition of 1964 (which has been left unaltered in its many reprints), Toulmin writes that the reactions to the first edition of *The Uses of Argument* only had strengthened his convictions:

The reaction which the argument of the book met with from the critics in fact served only to sharpen for me the point of my central thesis – namely, the contrast between the standards and values of practical reasoning [...] and the abstract and formal criteria relied on in mathematical logic and much of twentieth-century epistemology. (p. viii)

According to Toulmin, logic has for too long been reluctant to drop its narrow formal conception of validity, which is responsible for the insignificance of logic for the evaluation of arguments as they occur in practice. His chief aim with *The Uses of Argument* was to bring logic closer to argumentation in everyday life and in the academic disciplines. This could only be achieved, he argued, by way of a radical change in orientation.

The line of approach Toulmin chose in realizing the radical change he had in mind is interpreted differently by various scholars. Although Toulmin contrasted his model of argumentation with the analysis of argument in Aristotelian categorical syllogistic, some authors saw similarities between his model and the syllogism (e.g., Manicas 1966). Others pointed out relationships between the model and

⁷⁶ See Abelson (1960–1961), Bird (1959), Castaneda (1960), Collins (1959), Cooley (1959), Cowan (1964), Hardin (1959), King-Farlow (1973), Körner (1959), Mason (1961), O'Connor (1959), Sikora (1959), and Will (1960). Less hostile but sometimes also critical were the reactions when the German translation of *The Uses of Argument* was published in 1975: Huth (1975), Schwitalla (1976), Metzger (1976), Schmidt (1977), Göttert (1978), Berk (1979), Öhlschläger (1979), and Kopperschmidt (1980).

⁷⁷ More recent and generally more positive reviews of the Toulmin model are Hample (1977b), Burleson (1979), Reinard (1984), and Healy (1987).

classical dialectic and rhetoric, particularly as regards the concept of *topos* and the classical epicheireme (Kienpointner 1983, 1992).⁷⁸ As we have seen in Sect. 4.9, according to Trent (1968) Toulmin's layout of argument is essentially the same as the one in the Ciceronian epicheireme (see Sect. 4.9). Otto Bird (1961) pointed to a similarity between Toulmin's model and the discussion of topics in medieval logic,⁷⁹ stemming from Boethius and found in the tradition running from Abelard to Paul of Venice. He interprets Toulmin's warrant as the counterpart of a "topical maxim" and Toulmin's backing as the counterpart of a "topical difference."⁸⁰

Toulmin's model of argumentation was discussed in more detail by Frans H. van Eemeren, Rob Grootendorst, and Tjark Kruiger (1984), based on an earlier publication in Dutch (Eemeren et al. 1978). One of the major problems they point at in considering the model as an instrument for analysis and evaluation is the vagueness, ambiguity, and sometimes even inconsistency in Toulmin's use of key terms (p. 200). In his explication of the field-dependency of the backing in *The Uses of Argument*, Toulmin gives the impression by the way in which he uses these terms that *field of argument*, *topic*, and *discipline* are synonymous. An example of vagueness is the term *field of argument*, which Toulmin defines by reference to another vague term, *logical type*. Somewhat inconsistently, in the textbook Toulmin published twenty years later with Rieke and Janik (Toulmin et al. 1979), a disciplinary interpretation of fields of argument prevails.⁸¹

Of serious concern to van Eemeren, Grootendorst, and Kruiger is the confusion Toulmin creates by his use of the terms *valid* and *validity*. Sometimes he seems to use the word "valid" in the same sense as the logical term. More often, however, he appears to use it in a much more general sense, meaning something like "sound," "defensible," "well-grounded," "cogent," "good," or "acceptable." A confusing ambiguity in this regard is involved in the phrasing of the central questions of the chapter in which Toulmin (2003) presents his model: "How, then, should we lay an argument out, if we want to show the sources of its validity? And in what sense does the acceptability or unacceptability of arguments depend upon their "formal" merits and defects?" (p. 88). Although Toulmin's first sentence leaves room for the interpretation that the term *validity* is to be understood in its logical sense, the second sentence suggests that validity is equal to acceptability. Although this is not certain, it seems in the context of *The Uses of Argument* most likely that he uses the

⁷⁸ See Sect. 12.7 for a short overview of Kienpointner's views.

⁷⁹ Hitchcock notes (personal communication) that Toulmin (2006) later mistakenly claimed that Bird described *The Uses of Argument* in his review as "a rediscovery of Aristotle's Topics" (p. 26).

⁸⁰ According to Hitchcock (personal communication), Bird's analysis is suspect, since the topical difference of medieval logic does not provide justification of the topical maxim (which is a rule of inference, rather like Toulmin's warrant) but rather a specification of it.

⁸¹ Cf. for other criticisms of Toulmin's treatment of fields of argument Habermas (1981), who opted as a consequence for a different approach.

word “validity” not in its technical meaning but in what he takes to be its ordinary meaning.

In van Eemeren, Grootendorst, and Kruiger's view, throughout *The Uses of Argument*, Toulmin does not differentiate as clearly as required between the specific logical meaning of validity and its general nontechnical meaning. This distinction is important in answering the question of whether the “validity of an argument” is field-invariant or field-dependent. Here they point again to the Petersen example, where the fact that the validity of (1) “Petersen is a Swede,” (2b) “The proportion of Roman Catholic Swedes is zero” (B), and (3) “Petersen is not a Roman Catholic” is not the consequence of formal qualities for Toulmin implies that the validity of (1) “Petersen is a Swede,” (2a) “A Swede can be taken to be certainly not a Roman Catholic” (W), and (3) “Petersen is not a Roman Catholic” cannot be the consequence of formal qualities either.

According to Toulmin (2003), the argument in which the major premise (2) is interpreted as a backing (2b) may be sound or acceptable in practice, “[b]ut there can no longer be any pretence that the soundness of this argument is a consequence of any formal properties of its constituent expressions (p. 111).”⁸² In this connection van Eemeren, Grootendorst, and Kruiger make several observations.

First of all it seems clear to them that the general and undefined terms *acceptable* and *sound*, on the one hand, and the logical and well-defined term *valid*, on the other hand, are turned into synonyms.⁸³ Second, from the observation that argument 1-2b-3 cannot be called a formally valid argument because of its form, even though it is sound or acceptable in the practical sense, it cannot be concluded that *therefore* the validity of argument 1-2a-3 cannot be due to its formal properties either.⁸⁴ Third, it remains obscure what form exactly the warrant must take in order for the argument to

⁸² In *The Uses of Argument*, Toulmin assumes that the main function of an argument is to justify a conclusion. According to Cowan (1964, pp. 32, 43), its function is to supply a lucid organization of the material. Only in analytic arguments this objective is realized to the maximum. Cowan thinks that Toulmin's substantial arguments can easily be made analytic by making one or more unexpressed premises explicit. The kind of “reconstructive deductivism” promoted by Cowan is criticized by informal logicians. For a discussion of these criticisms and a defense of deductivism, see Groarke (1992).

⁸³ In spite of the fact that Toulmin is discussing the possibility of explaining validity in terms of formal properties in a geometrical sense, it might be the case however that, here too, he uses the term valid(ity) in its ordinary common speech meaning of being good, comparable to its use in phrases like “valid passport” and “valid point.”

⁸⁴ By the way, unlike what Toulmin suggests, argument 1-2a-3 is in this form not formally valid in, say, standard syllogistic logic, propositional logic, or predicate logic. The same is true for the argument (1) “Petersen is a Swede” (2a) “A Swede is almost certainly not a Roman Catholic” so (3) “Petersen is almost certainly not a Roman Catholic.” This argument does in fact not even become formally valid if the warrant (2a) is interpreted as a major premise: (2) “Almost no Swedes are Roman Catholics.”

be valid in Toulmin's own, "general" sense.⁸⁵ It might be thought that Toulmin does not actually regard this question as very important, since his only intention is to show that it is, ultimately, the (field-dependent) backing for the warrant – whatever form it may take – which determines the validity or invalidity of an argument. But this is not very likely, because Toulmin himself says that a condition for determining formal validity of an argument is that the warrant shall be formulated explicitly as a warrant and that it shall justify precisely the inference concerned (2003, p. 110). He does not elaborate on the requirements of an explicit formulation or a precise warrant.

Following Toulmin in his interpretation of validity as broader than formal validity, in the fourth comment van Eemeren, Grootendorst, and Kruiger make, it is not so difficult to agree that the validity of argumentation is not entirely a matter for formal logicians and that field-dependent considerations may come into play. Various authors, such as Henry W. Johnstone Jr. (1968), and Manicas (1966), agree in fact with Toulmin's claim that the evaluation of argumentation in everyday life and in academic life requires norms other than those provided by formal logic and that such other norms cannot be universally established for all argumentation, but are field-dependent. They disapprove however of Toulmin's confusing use of logical terms which have in logic a clear and fixed meaning. By reinterpreting these terms in such a way that they become useless for logical purposes, in their opinion, Toulmin only obscures his own worthwhile cause. In addition, and more importantly, according to some authors, the ultimate implication of Toulmin's view is that only experts in a particular field are competent to evaluate argumentation in that field (e.g., Abelson 1960–1961).⁸⁶

Van Eemeren, Grootendorst, and Kruiger wonder whether it is in practice always possible to differentiate between data and warrants. Toulmin himself admits that sometimes this may be difficult. This problem may be partly caused by the two different characterizations Toulmin (2003) gives when introducing the concepts of data and warrants. The first is that data contain specific factual information, while warrants are general, hypothetical, rule-like statements that act as a bridge between claim and data and authorize the step from data to claim (p. 91). The second is that data are explicitly appealed to, warrants implicitly (p. 92). Although Toulmin

⁸⁵ If an argument is to be formally valid, this can only be the case if and only if its conclusion can be obtained by the premises by a mere shuffling of terms, as Toulmin thinks formal validity to be defined. A condition for formal validity on the warrant would then be that it includes any term in the conclusion that is not in the data; it need not, and generally does not, include any term in the conclusion that is not in the data. According to Hitchcock (personal communication), the warrant is a license to infer from the sort of things said in the data about whatever is common to data and conclusion that which is said in the conclusion.

⁸⁶ It is not exactly Toulmin's position that only experts in a particular field are competent evaluators, but it may be true that in problematic cases the experts in a field are indeed the ultimate authority on what warrants are acceptable in that field. Going by Toulmin (2006), he seems to recognize this.

emphasizes that their different function is the key distinction (p. 92), it is, according to van Eemeren, Grootendorst, and Krugier, in practice often hard to determine which statements are data and which statement serves as the warrant⁸⁷ – even if the additional criteria are also taken into account (which may just as well complicate the identification process).⁸⁸ They illustrate this problem by changing the example given in Fig. 4.2 in the following way⁸⁹:

Claim (C)	(1) Harry is a British subject.	
		What have you got to go on?
Data (D)	(2) A man born in Bermuda is a British subject.	
		How do you get there?
Warrant (W)	(3) Harry was born in Bermuda.	

In Toulmin's original example, the statement in (3) was the datum and the statement in (2) the warrant. The inversion which has taken place in the example is possible when, in the case concerned, the defender of the claim assumes that the challenger is acquainted with Harry's birthplace but not with the law. Therefore, in his argumentation (3) is initially implicit, while (2) is stated explicitly. Statement (3) is adequate because the challenger's question shows that the defender's supposition that the challenger knows where Harry was born is incorrect⁹⁰; statement (3) now functions as a bridge between (1) and (2). Thus the datum (2) is in this case a general, rule-like statement, and the warrant (3) contains specific factual information.⁹¹ If statement (2) is nevertheless to be understood to be the warrant and statement (3) the datum, then – in contrast to what one of the criteria for making

⁸⁷ In response to the claim that, in practice, it is often difficult to establish which statements are the data and which statement is the warrant, Hitchcock (2003) reports having analyzed 50 samples he extracted randomly. For 49 arguments, he had no difficulty in singling out an applicable “inference-licensing covering generalization.”

⁸⁸ For similar and other objections to the distinction between data and warrants, see Schellens (1979), Johnson (1980), and Freeman (1991, pp. 49–90).

⁸⁹ In spite of the fact that – according to Hitchcock – van Eemeren and Grootendorst's example is unrealistic, it still poses a problem for the Toulmin model. Hitchcock thinks that this problem can be solved by pointing to the fact that “a first-order particular statement is logically equivalent to a second-order universal generalization, and thus can function as a general rule of inference” (personal communication).

⁹⁰ Another option than issuing this singular statement would be, for instance, to point out that Harry was not born in Bermuda but enjoys for some other reason the same status.

⁹¹ Toulmin states that warrants are general, rule-like statements (p. 91), which is a problem here. He does not explicitly require the specific information provided in data to be confined to particular statements. Both Toulmin (2003) and Toulmin, Rieke, and Janik (1979) focus on examples in which the data (or grounds) are singular statements about a particular individual. The textbook even says explicitly that the demand for grounds is a demand for specific features of a specific situation rather than for general considerations (Toulmin et al. 1979, p. 33). Nevertheless Toulmin allows for a universal statement like “All club-footed men have difficulty in walking” to be construed as a factual report of our observations that can function as a datum (Toulmin 2003, p. 106).

the distinction stipulates – the warrant has been explicitly expressed and the datum remains implicit.⁹²

By way of this example, van Eemeren, Grootendorst, and Kruiger show that the different characterizations Toulmin gives of data and warrants sometimes seem to conflict with each other. If one wants to be consistent, a clear choice has to be made between the characterizations. It is obvious that sticking to the explicit/implicit distinction will not solve anything. It seems preferable to interpret data as containing factual information and warrants as general and rule-like statements, referring to the argument scheme that is used. The latter interpretation is in fact the one that is, albeit usually implicitly, favored in most textbooks in which the Toulmin model is used, including explicitly in Toulmin, Rieke, and Janik (1979).

As van Eemeren, Grootendorst, and Kruiger (1984) noticed, Toulmin's model was soon widely accepted as a useful model for analyzing argumentation.⁹³ In analyzing argumentation in spoken discourse and written texts, the model can be used to make argumentation structures more transparent and in this way provide a good starting point for evaluation.⁹⁴ Because a prerequisite for an adequate evaluation of argumentative discourse is that all the complexities of the structure of the argumentation are laid bare in the analysis, van Eemeren, Grootendorst, and Kruiger wonder whether the Toulmin model is fully equipped to fulfill this task – in spite of the fact that Toulmin turned his model from a model of single argumentation into a model of complex argumentation by including the backing.⁹⁵ Another matter is that, in their view, by including the backing in his model, Toulmin overreaches his aim of laying out “micro-arguments.”⁹⁶

Toulmin assumes in laying out his model that the data are accepted as correct by the challenger. If this is not the case, he says, it will have to be made the case by way of preliminary argumentation. The datum from the one argument will then be the claim in the other. There is no reason however why the same should not also apply to the warrant. If a warrant is not immediately accepted as authoritative, then an attempt must be made to remove the objections by means of new argumentation,

⁹² According to Hitchcock (personal communication), the warrant is “If a man born in Bermuda is a British subject, then Harry is a British subject” or “Given that a man born in Bermuda is a British subject, we may take it that Harry is a British subject.” In statement form the rule of inference involved would go as follows: “Harry has whatever status belongs to a man born in Bermuda.” Hitchcock notes that this statement follows logically from the statement that Harry was born in Bermuda. It need not be logically equivalent to it.

⁹³ Initially the model was not so much used for the purpose of evaluation, Hastings (1962) being an early exception. Later others joined in. See Sect. 4.8.

⁹⁴ For a survey of practical problems confronted in applying the Toulmin model to the analysis of argumentative texts, see Schellens (1979), who also offers some solutions.

⁹⁵ For “complex” argumentation as distinguished from “single” argumentation, see Sect. 1.3 of this volume.

⁹⁶ If a “micro-argument” is indeed equivalent with “single” argumentation, which is probably not what Toulmin had in mind, he claims that his way of laying out micro-arguments makes apparent the sources of their validity, i.e., the extent to which the arguments justify their conclusions, which may involve more than single argumentation.

with the warrant from the first argumentation serving in statement form as the claim of the new argumentation. If the argumentation contains a backing for the warrant, then there are in fact *two* single argumentations, the one being subordinately connected with the other,⁹⁷ so that the argumentation is no longer single but complex.

To the criticisms just mentioned, the criticisms may be added that Manfred Kienpointner (1983, p. 80) summarized from responses to the 1975 German translation of *The Uses of Argument*. First, as van Eemeren, Grootendorst, and Kruiger also noticed, in analyzing argumentation it may be difficult to determine whether to classify supporting reasons as data or as warrant or backing. According to Toulmin, in some cases a statement can even function in several ways. Second, because the support of the warrant by its backing constitutes a new argument, this argument must have its own warrant. Third, Kienpointner (1983, p. 85) also raises the problem of whether an explicit conditional conclusion-supporting sentence should always be interpreted as the warrant and the implicit component should be taken to be the data. He takes the position that explicit conditional sentences should be interpreted as warrants only if the data indicating satisfaction of the conditional's antecedent condition are also explicit.

According to Freeman (2006),⁹⁸ who generally takes a positive approach to the Toulmin model, Toulmin's notion of warrant is problematic. He objects to Toulmin's equivocation on the status of warrants: rules and statements. Warrants are, as Freeman quotes from Toulmin, "rules, principles, inference, licenses, general, hypothetical statements, which can act as bridges," but rules and inference licenses are not statements (although corresponding to an inference rule is a generalized hypothetical statement) (Freeman 2006, pp. 87–88). Freeman maintains the warrant, but chooses to see a warrant as "an inference rule, albeit not necessarily formal, demonstrative, deductively valid" (p. 88). This conception is in line with Toulmin's indication that a warrant can be more explicitly represented in the form "Given data such as D, one may take it that claim such as C," which can be seen as an inference rule. However, an inference rule like "Given that a premise such as P, one may take it that a conclusion such as C" will render *any* premise relevant to the conclusion. Toulmin acknowledges this and makes clear that this is why one may ask for a backing of the warrant.

According to Toulmin, in different fields warrants will be backed in different ways. Freeman regards this kind of field-dependency problematic. First, identifying to what field a warrant (and its backing) belongs may be problematic since the notion of field is vague. Second, to legitimize warrants used in arguments within a field, we need to look at the field concerned because the standards for argument evaluation are field-dependent. Freeman wonders how we are then to assess whether a warrant is properly backed. Third, and this is a problem indicated by

⁹⁷ For the notion of "subordinatively compound" argumentation, see [Sect. 1.3](#) of this volume.

⁹⁸ For further discussion of Freeman's contribution to argumentation theory, see [Sect. 7.7](#) of this volume.

Toulmin himself: if one were to demand backing for every warrant, an infinite regress would be very likely. We must accept certain warrants provisionally, taking for granted that the most reliable warrants can be shown to be acceptable. According to Freeman, this raises a significant epistemological question: do we simply provisionally accept certain warrants, or are some warrants acceptable in a basic way, analogous to acceptable basic premises?

Given the problems just indicated, Freeman proposes a differently based approach to warrant reliability, which leads to an epistemologically motivated systematization of warrants. The basis for this approach is a general taxonomy of statements: necessary statements, descriptions, interpretations, and evaluations. Descriptions can, in Freeman's view, not function as warrants. Interpretative warrants he subdivides into empirical and institutional warrants. The taxonomy he thus achieves consists of four main types of warrants: a priori, empirical, institutional, and evaluative. According to Freeman, each of these main types is grasped by means of a distinctive mode of intuition. The main types will each have subtypes, which are grasped by a corresponding subtype of intuition. According to Freeman, for different types of warrants, the conditions of reliability will be different.

Despite these and other criticisms that were advanced, Toulmin's model has had an enormous influence on practical textbooks dealing with the analysis, evaluation, and production of argumentation. A major attraction of the model is probably that it explicitly addresses argumentation in ordinary language in real-life situations and makes clear how this can be done in a relatively simple way. Perhaps equally attractive seems to be Toulmin's view of the context-dependency of the standards for assessing argumentation, and his starting point that in establishing the relevant criteria the supremacy of one particular field of argument over others must be rejected. In claiming that, in principle, each field provides the criteria for arriving at a rational evaluation of argumentation in the field concerned, the idea that there are absolute and universal standards is abandoned.

The strong impact of Toulmin's ideas on current argumentation theory manifests itself in our view most clearly in two crucial areas: the development of (warrant-based) taxonomies of argument schemes and the study of (field-related) context-dependent standards for argumentation. The impact of the first kind is most clearly noticeable in the contributions of argumentation theorists in informal logic and argumentation and artificial intelligence (see [Chaps. 7, "Informal Logic"](#) and [11, "Argumentation and Artificial Intelligence"](#) of this volume). The second kind of impact is most prominently present in the work of argumentation scholars in American communication studies and rhetoric (see [Chap. 8, "Communication Studies and Rhetoric"](#) of this volume). It should be emphasized however that other argumentation theorists have also strongly benefitted from Toulmin's insights. In the pragma-dialectical study of prototypical argumentative patterns in different communicative activity types, for instance, the two major influences just mentioned conjoin (see [Chap. 10, "The Pragma-Dialectical Theory of Argumentation"](#) of this volume).

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5.1 The Authors, Perelman and Olbrechts-Tyteca

In 1958, the Belgian philosopher Chaïm Perelman and his compatriot Lucie Olbrechts-Tyteca published *La nouvelle rhétorique: Traité de l'argumentation*, a seminal work in argumentation theory. The reception of this monograph gained momentum after in 1969 an English translation was published, titled *The new rhetoric: A treatise on argumentation*. Carrying on from the title of their book, Perelman and Olbrechts-Tyteca's theory of argumentation is generally referred to as the *new rhetoric*. Just like Stephen Toulmin's (1958) model of argumentation, which was introduced in the very same year in *The uses of argument*, Perelman and Olbrechts-Tyteca's new rhetoric has become a key factor in the development of argumentation theory as an independent discipline.

Perelman (1912–1984) was born in Warsaw, Poland, but moved with his parents to Belgium. He spent his entire academic life at the Free University of Brussels. Perelman studied law and philosophy; his doctoral dissertation was on Frege.

After having been a lecturer for several years, Perelman became professor of logic, ethics, and metaphysics. This chair he held from 1944 until his death. His associate, Olbrechts-Tyteca (1900–1987), was born in Brussels. She studied a wide variety of subjects (literature, sociology, social psychology, and statistics) at the Free University of Brussels and graduated in social sciences and economics. Olbrechts-Tyteca met Perelman in 1948, when they decided to start their joint research project on rhetoric and argumentation.¹

Perelman has written a great many books and articles centering on subjects relating to justice, law, argumentation, and rhetoric. In this chapter, we will concentrate on his *magnum opus* with Olbrechts-Tyteca. First, we describe in Sect. 5.2 the intellectual backgrounds of the new rhetoric and summarize in Sect. 5.3 some general characteristics of the theory. Then, we expound in Sect. 5.4 the rhetorical framework of the theory, revolving around the notion of *audience*. Next, the two major parts of the new rhetoric are discussed: in Sect. 5.5 the *points of departure* of argumentation and in Sects. 5.6–5.10 the *argument schemes*. Finally, we describe in Sect. 5.11 the recognition of the theory by other scholars and in Sect. 5.12 we report some critical comments.²

5.2 The Intellectual Backgrounds of the Authors

The idea of developing the new rhetoric was born out of Perelman's interest in a "logic of value judgments."³ Already at an early stage in his career, Perelman was intrigued by the problematic relationship between logical rationality and value judgments. His early thoughts on the matter do not seem to have been received very enthusiastically. A review of *De l'arbitraire dans la connaissance* [On the arbitrary in knowledge], an essay written by Perelman (1933), concludes: "The author has some ideas about the arbitrariness of the postulates on which knowledge is built, resembling those of C. I. Lewis in this country, but inspired by Dupréel. He has not developed them very far, nor has he succeeded in expounding them very well" (Costello 1934, p. 613).

¹ For an account of the division of labor between the two authors of the new rhetoric, see Warnick (1997). According to Perelman's daughter, Noémi Perelman Mattis, "in their joint work the theoretical armature is entirely Perelman's, the examples were mostly Olbrechts', and they shared the writing." Although devoted friends, "they never let go of a quaint formality in their contacts." After 36 years of collaboration "they still called one another 'Madame Olbrechts' and 'Monsieur Perelman'" (personal recollection, August 12, 1994). For further biographical information, see Gage (2011, pp. 8–18).

² The present chapter is a revised and updated version of a similar overview in van Eemeren et al. (1996, Chap. 4).

³ See Gross and Dearn (2003, p. 7): "Stated succinctly, Perelman sought to discover a 'logic of value judgments' applicable to the practical affairs of life where decisions have to be made every day without conclusive evidence or formally valid proofs."

Much later, the relationship between logical rationality and value judgments became the central theme of Perelman's research. In the 1940s, he published a number of articles in which he investigated various philosophical questions relating to this subject, particularly with regard to the law. His study of the underpinnings of material law led him to conclude that the possibility of formal law depends on particular value judgments.⁴ People can only be treated equally, for instance, if it is first established that they are in similar circumstances, and the criteria required for determining whether this is the case are partly based on value judgments. Other examples of relevant value judgments are the view that in certain circumstances, people cannot entirely, or at all, be held responsible for their actions and the view that when determining a sentence, the interests of the defendant as well as those of the community at large must be taken into account.

According to his own testimony, at this time Perelman adhered to the philosophy of logical empiricism (1970, p. 280). However, he felt dissatisfied with the inability of this philosophy to account for the use of value judgments. Within logical empiricism, the adjectives *rational* and *reasonable* are strictly reserved for statements that are capable of being verified by empirical observations or being deduced within the system of formal logic. In practice, however, lawyers – like philosophers and other language users – rarely produce perfect formal proof of the theses they advance but rather try to justify them. According to Perelman, such attempts at justification may very well be regarded rational, and the logical empiricist point of view that argumentation based on value judgments is not rational would render the notion of a “reasonable decision” meaningless. As a consequence, there would be no rational basis for formal law as the systematic application of rules founded on value judgments.⁵

Perelman's observation that logical empiricism has the negative consequence just mentioned led him to look for a logic in which it is possible to argue about values instead of simply letting justifications depend on irrational choices based on interests, passions, prejudices, and myths. He felt that recent history had provided abundant evidence of the sad excesses that can result from the latter attitude. However, critical research of the existing philosophical literature did not provide him with such a logic: “I agreed with the criticisms made by various types of existentialism against both positivist empiricism and rationalistic idealism, but I could find no satisfaction in their justification of action by purely subjective projects or commitments” (1970, p. 281).

From his early philosophical investigations, Perelman drew the conclusion that argumentation aimed at justification of choices, decisions, and actions is a rational activity standing alongside formal argument and that existing philosophical

⁴ Material law is concerned with setting out the citizen's rights and obligations and lays down regulations. Formal law regulates the manner in which material law is administered.

⁵ For the distinction between *rational* (the formal applications of rules) and *reasonable* (the use of judgment and commonsense), see Perelman et al. (1979b).

theories were unable to give a satisfactory account of it. Based on this conclusion, he was of the opinion that there was an urgent need of a theory that could deal with such argumentation and that could function as a complement of formal logic. The theory to be developed should focus on disputes in which values play a part and that can neither be resolved by empirical verification or formal proof nor by a combination of the two. It would have to be a theory of argumentation on the basis of which it would be possible to show how choices, decisions, and actions can be justified on rational grounds.

In 1949, Perelman announced that the desired theory of argumentation would be developed. Then, together with Olbrechts-Tyteca, he spent 10 years doing so. After some programmatic articles and partial studies, the tandem published the results of their research in a bulky survey, *La nouvelle rhétorique: Traité de l'argumentation* (Perelman and Olbrechts-Tyteca 1958). Later an Italian translation of this work was published (Perelman and Olbrechts-Tyteca 1966). The English translation followed three years later (Perelman and Olbrechts-Tyteca 1969).⁶

The name of the theory, *new rhetoric*, reflects its source of inspiration. Formal logic and related philosophical approaches proved to have few things to offer for developing the kind of theory of probable argument Perelman and Olbrechts-Tyteca had in mind. Instead their search eventually led them to a rediscovery of the classical disciplines of dialectic and rhetoric as Aristotle and scholars with a similar interest developed them in antiquity.⁷

Like in classical rhetoric, in the new rhetoric the notion of *audience* plays a pivotal role. It is postulated in the new rhetoric that argumentation is always designed to achieve a particular effect on those for whom it is intended. Since arguers unfold their argumentation in order to sway the audience, or to convince them of something, the argumentation should be designed in accordance with criteria for its effectiveness in achieving this goal. This means that the techniques used in the argumentation need to be attuned to the audience's frame of reference. To achieve this goal, the arguers must identify themselves as much as possible with the audience and build on the audience's knowledge, experiences, expectations, opinions, and norms. The strong emphasis Perelman and Olbrechts-Tyteca put on this point marks their theory of argumentation as a rhetorical theory. It is a theory calculated to provide a systematic survey of the knowledge that is necessary to bring about persuasive effects on the people to whom one addresses oneself in argumentation.

⁶The most recent French edition is Perelman and Olbrechts-Tyteca (2008). For the reader's convenience, we shall henceforth refer to the 1969 English translation.

⁷For an autobiographical account of the encounter with classical rhetoric and the development of the new rhetoric, see Olbrechts-Tyteca (1963). Olbrechts-Tyteca also acknowledges Perelman's admiration for Peirce's ideas concerning a *rhetorica speculativa*, or *objective logic*, which studies the transmission of meaning from mind to mind and from one state of mind to another by means of signs.

But there are also differences with the classical discipline of rhetoric. The scope of the object of investigation, for instance, is in the new rhetoric wider than in classical rhetoric. Whereas the latter mainly relates to orations held in the context of law, in politics, or on special occasions, the new rhetoric deals with written as well as oral argumentation and presupposes that argumentation can be about any subject and may be addressed to an audience of any sort and size.

According to Perelman and Olbrechts-Tyteca, the dialectical component of the new rhetoric is so substantial that they could also have called the theory the *new dialectic*. However, it would have been confusing if they would really have done so, not only because classical dialectic is more closely related to analytic reasoning than the new rhetoric but according to Perelman and Olbrechts-Tyteca also because the different usage of the term *dialectic* that Hegel and Marx have introduced might have given rise to serious misunderstandings. As Perelman (1971) observes, “there should be no hesitation in calling [the theory] rhetoric, for our cultural milieu has for over a century identified dialectic with the conceptions of Hegel and Marx, and rhetoric is the only discipline traditionally concerned with an audience” (p. 118). By embedding their theory in the rhetorical rather than the dialectical tradition, Perelman and Olbrechts-Tyteca do not repudiate dialectic. In their view, dialectic is a theory relating to the techniques of argument, while rhetoric is a practical discipline indicating how such dialectical techniques may be used to convince or persuade an audience.

5.3 General Characteristics of the New Rhetoric

According to Perelman (1970), the new rhetoric constitutes a reaction to the philosophies of *positivistic empiricism* and *rationalistic idealism*, which simply pass by important areas of rational thinking, such as legal reasoning. Instead of rendering these areas of thinking irrational, the new rhetoric is premised on the idea that people who claim rationality will have to use argumentation to convince others that their claims are justified.

This requirement also applies to philosophical reasoning. As a rule, philosophers do not offer formal proof of the rightness of their ideas. Rather, they try to justify the rationality of those ideas with the help of argumentation. In principle, it is the philosopher’s own choice which audience he or she wishes to convince with the argumentation. While some philosophers will wish to convince the adherents of a particular school of thought or a few recognized specialists, others will wish to convince humanity as a whole. The same goes, *mutatis mutandis*, for attempts to convince others in other areas of “non-analytic thinking,” such as the field of law.⁸ Argumentation in non-analytic thinking is always directed toward convincing

⁸ Although Perelman does not exactly define what he means by *non-analytic thinking*, it is clear from what he says that he refers to reasoning based on discursive means for obtaining the adherence of minds rather than on the idea of self-evidence prevailing in modern logic and mathematics.

people, and the new rhetoric is designed to do justice to this essential characteristic. On the basis of an analysis of non-analytic thinking, the theory aims to bring about a synthesis between the seemingly conflicting claims different thinkers (and representatives of different thought systems) make to rationality.

The sources of inspiration for Perelman and Olbrechts-Tyteca's analysis of the rationality of non-analytic thinking do not only include classical dialectic and rhetoric but also the work of the German mathematician, logician, and philosopher Gottlob Frege (1848–1925) and those of the Belgian sociologist and philosopher Eugène Dupréel (1879–1967).

Frege's influence mainly concerns the methodology that is used in the new rhetoric. Frege developed his theory of logic on the basis of a descriptive analysis of mathematical reasoning. In the same vein, Perelman and Olbrechts-Tyteca claim to have developed the new rhetoric on the basis of a descriptive analysis of reasoning with value judgments in the fields of law, history, philosophy, and literature. Instead of elaborating a priori possible structures for a logic of value judgments, they decided to investigate how authors of different schools of thought actually argue about values, in order to discover in this way the manifestations of a logic of value judgments.⁹

As a result of the methodological choice just described, the new rhetoric can be characterized as a descriptive rather than a normative theory of argumentation. Perelman and Olbrechts-Tyteca do not provide norms to which they think arguers ought to adhere but give a description of various kinds of argumentation that can be successful in practice.¹⁰ At the same time, according to Perelman (1970), the new rhetoric is not merely a theory that describes the practice of nonformal argument. Following on the idea that a theory of argumentation should make it possible to incorporate different claims to rationality in one general perspective, the new rhetoric is an attempt at creating a single theoretical framework for uniting all forms of non-analytic thinking.

Dupréel's influence on the new rhetoric can be traced in the view of rationality that underlies the theorizing. His sociology postulates that values have a crucial role in the formation of social groups, because such groups are established on the basis of values shared by their members. This idea is reflected in Perelman and Olbrechts-Tyteca's view of rationality, which is pluralistic in the sense that it is aimed to do justice to the diversity of values that characterizes social reality.

5.4 The Dominant Role of the Audience

Perelman and Olbrechts-Tyteca define the new rhetoric as “the study of the discursive techniques allowing us *to induce or to increase the mind's adherence to the theses presented for its assent*” (1969, p. 4, original italics). The notion of *adherence*, which

⁹ For an account of this methodological similarity, see Perelman (1970, p. 281).

¹⁰ The norms for rationality and reasonableness described in the new rhetoric therefore have an “emic” basis.

is central in this definition, they conceive as a relative and a gradual concept. It is a relative concept, since the theses adhered to by one person may not be adhered to by another. And it is a gradual concept, since the adherence to theses may vary in intensity. It is possible for someone to agree with something “a hundred percent” but also to agree with it “up to a point.” As a consequence, argumentation can also be aimed at strengthening the agreement of those who already agree with the thesis presented by the arguer: It may make a thesis wholly acceptable but may also make it more acceptable.

Since the measure of approval depends on the value judgments of the evaluating audience, the description of argumentative techniques given in the new rhetoric starts from the audience. In this respect, the new rhetoric radically differs from formal logic. Within the latter, the cogency of an argument is defined in terms of the relation between the premises and the conclusion, so that a valid deduction is supposed to be compelling to anyone who accepts the formal system concerned. Argumentation in ordinary language however is, according to Perelman and Olbrechts-Tyteca, never immediately compelling. The symbols that are used – words and sentences – are in principle polysemous, and the totality of premises may make the conclusion to a greater or lesser degree acceptable. Within the new rhetoric, then, the decision with respect to the soundness of argumentation is not a matter of validity but of plausibility. In this theoretical perspective, the decision concerning the soundness of argumentation ultimately rests with the audience for which it is intended.

In explaining the framework of their theory of argumentation, Perelman and Olbrechts-Tyteca define an *audience* as “*the ensemble of those whom the speaker wishes to influence by his argumentation*” (1969, p. 19, original italics). In their view, the speaker or writer’s picture of the audience is always one of his or her own making. It is the idea – systematized to a greater or lesser degree – that the arguer has formed about the persons he wishes to influence by the argumentation. In this sense, according to the new rhetoric, the audience is a construction of the arguer.

In order to increase the audience’s adherence to the theses presented by the arguer for their assent, the arguer’s picture of the audience must be as accurate as possible. The main problem in composing such a picture is that the audience may be heterogeneous in all sorts of ways. More often than not, audiences will consist of different people, with different opinions. Apart from this and similar complications, in oral argumentation, the arguer’s construction of the audience will often be subject to change during the process of argumentation (e.g., under the influence of positive or negative reactions to what already has been said).

Effective argumentation requires a certain degree of rapport between the speaker or writer who is the arguer and the audience. The arguer’s train of thought must in some way be in accord with the audience’s way of thinking. In practice, this condition is not always met automatically. Often the arguer must first gain the attention of the listeners or readers before the audience is prepared to attend seriously to the argumentation. As a rule, it is an illusion to suppose that argumentation will “speak for itself” and convince the audience by its own merits. Instead, the arguer will have gain and maintain the interest of the audience with the help of anecdotes, examples, and stylistic devices before the argumentation can be effective.

The arguer's knowledge concerning the audience will also have to cover the techniques that can be employed to influence the audience. All arguers have to decide for themselves to what extent they wish to adapt to their audience. The problem of the ethics to be employed in this regard, say Perelman and Olbrechts-Tyteca, is outside of the scope of argumentation theory.

In the new rhetoric, argumentation that meets with approval from one particular person or group is called *persuasive*, and argumentation which may be assumed to be acceptable to any reasonable being is called *convincing*. The connection with the familiar usage of the word *persuading* for moving others to some course of action and *convincing* for creating cogent beliefs is only made indirectly. It is primarily the sort of audience for which the argumentation is intended and proves to be effective that determines the distinction between persuasive argumentation and convincing argumentation.

In this connection, Perelman and Olbrechts-Tyteca distinguish between a *particular* audience, which consists of a particular person or group of people, and a *universal* audience, which consists of all human beings that are considered reasonable. Persuasive argumentation lays claim to approval from a particular audience; convincing argumentation lays claim to approval from the universal audience. Since only real-life people who are in some way or other recipients of the argumentation can be prompted into action, persuasive argumentation is obviously connected with a particular audience. The composition of a universal audience is determined by the idea of reasonable people that arguers have formed in their own minds.¹¹ The approval of the universal audience, and the accompanying change in belief, is therefore more a right to which the arguer lays claim than an empirical fact.¹²

The picture arguers have of the universal audience may vary from arguer to arguer or perhaps from group to group. Some may regard a certain particular audience to embody a standard of rationality, thus fulfilling the function of a universal audience. For people living in the Middle Ages, for instance, a particular ecclesiastical elite may have been the embodiment of reasonable thinking. A particular group of colleagues may be the universal audience to a modern philosopher. To someone sending a "letter to the editor" to a newspaper, the readers of the paper may perhaps count as the universal audience supposed to be ready to concur. Ultimately, the concept of a universal audience transcends all particular audiences: A particular audience can never be more than a fortuitous, momentary embodiment of the universal audience.

¹¹ According to Olbrechts-Tyteca (1963, p. 12), the universal audience, though transcending the concrete, does not replace the concrete but is as close to it as possible. The concept does not occur in classical rhetoric, but it is related to that of an elite audience. The distinction made in classical dialectic between a universal audience and an elite audience is reflected in Aristotle's formulation of an *endoxon* as an opinion accepted by all, most, or the most wise people (see Sect. 2.3).

¹² Coupling the concepts of convincing and persuading to universal and particular audiences, respectively, means that making the distinction requires insight into the arguer's imagination. As a consequence, the distinction between convincing argumentation and persuasive argumentation will be imprecise. In practice, it will often be difficult to tell where convincing ends and persuading begins, and vice versa.

Arguers must decide for themselves whether they want to regard their audience purely as a particular audience or as an embodiment of the universal audience – in other words, whether they want to persuade or to convince their audience. Perelman and Olbrechts-Tyteca pay special attention to two specific cases: *self-deliberation*, in which the arguers constitute their own audience, and *dialogue*, in which the audience consists of a single interlocutor or reader. Both sorts of audience can also be seen as approximations of the universal audience. When they are seen in this way, the criticisms thought up by the arguers themselves or the criticism brought forward by the interlocutor or reader is regarded as representing universal rationality.

Self-deliberation may lead to self-criticism and to rejecting one's own train of thought as unreasonable. Although the arguers themselves may consider this process to be a process of convincing rather than of persuading, others may not agree with that. The exceedingly closed nature of the deliberation, for instance, may not be regarded as a guarantee that one is addressing oneself as a representative of the universal audience; it may just as well be seen as leading to self-deception. In Perelman and Olbrechts-Tyteca's view, from a rhetorical perspective, argumentation of people trying to come to terms with themselves is just a special case of argumentation aimed at obtaining the approbation of an audience. In their observation, deliberations that people conduct with themselves can best be seen as deliberations with some other person, who may or may not represent the universal audience.

Argumentation addressed to a single interlocutor or reader must be regarded as part of a dialogue, even if the addressee adopts a passive attitude and says nothing in reply. As far as they are accessible to the arguer, the reactions of the addressee – frowning, nodding, etc. – still have to be taken into account. Even with an audience that is totally impassive, the arguer who is out for success will anticipate possible counterarguments and try to meet supposed objections.

If the interlocutor does provide a reaction, perhaps by adducing counterarguments, there is the beginning of an explicit dialogue. This is, for instance, consistently the case in Plato's famous Socratic dialogues, in which the discourse is in fact a string of repartee. In these dialogues, the interlocutor may be seen as a representative of the universal audience. Plato seems to hold the view that the dialogical method leads to the truth and this could not be the case if the other party's objections and approval were to be regarded as fortuitous reactions from a particular and arbitrary audience.

Perelman and Olbrechts-Tyteca make a distinction – which is not so easily drawn in practice – between “heuristic” dialogues, which they call *discussions*, and eristic or polemical dialogues, which they call *debates*. In a discussion, the arguers seek to convince the other party, and the interlocutor is treated as an embodiment of the universal audience. In a debate, the arguers seek to persuade the other party, and the interlocutor is viewed as a particular audience. Still, without considering them as embodying the universal audience, debaters might very well regard the interlocutors – rightly or wrongly – as representing a more extended audience, like the Episcopalian church, the complete hockey team, or another set of people with whom they have a difference of opinion.

In the new rhetoric, it is postulated that argumentation always serves the rhetorical purpose of making a particular opinion (more) acceptable to an audience. As a consequence, Perelman and Olbrechts-Tyteca assume that the reasons the arguer puts forward in support of his or her opinion are intended to maximize this rhetorical effect. In a sense, these reasons can be regarded as rationalizations created by the arguer in order to justify an opinion in a way satisfactory to the audience.¹³ Such rationalizations need not have much to do with why and how the arguer has actually arrived at that opinion (the *causa* of the opinion). Rather, they are attuned to the audience that is to be convinced or persuaded and as much as possible adapted to the specific context in which the argumentation occurs. In a given case, a judge, for instance, may well have come to the conclusion that criminal intent lay behind the defendant's actions on the basis of a vague mixture of impressions, but when pronouncing the defendant guilty, he will shroud this judgment in legal argumentation. An even more obvious example is the defendant's counsel trying to present the court with acceptable arguments designed to secure an acquittal while intuitively believing that the client is guilty.

Perelman and Olbrechts-Tyteca's description of the concept of *universal audience* arouses serious problems and has been vigorously debated among argumentation scholars.¹⁴ What is beyond question, however, is that in designing the new rhetoric, they are less interested in the arguer being right than in the arguer being put in the right. They equate sound argumentation with effective argumentation and consider argumentation effective to the extent that it obtains the approbation of the audience for whom it is intended or – in the case of argumentation directed to the universal audience – to the extent that it may be regarded as deserving such approbation. The criteria for the evaluation of the quality of argumentation they endorse are not norms imposed by the argumentation theorist but the criteria applied by the people for whom the argumentation is intended or – in the case of a universal audience – the criteria those people who belong to the intended audience may be deemed to apply.

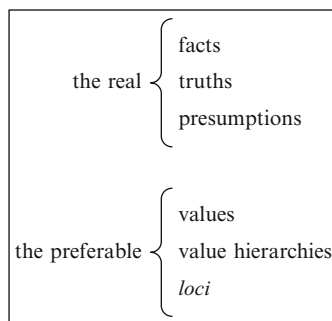
5.5 Points of Departure of Argumentation

Having sketched the general idea of the new rhetoric, we will now turn to a more technical discussion of the key notions of the theory. To provide a survey of argumentation techniques that may be successful in practice, Perelman and Olbrechts-Tyteca do not actually describe argumentation techniques but concentrate on the *argument schemes* they regard to have cogency. Since these argument

¹³ Perelman and Olbrechts-Tyteca give the term *rationalization* a less specific meaning than currently attached to it under the influence of psychology. In present-day discourse, rationalization usually refers to reasons advanced by people in defense of their behavior or attitude without them being aware that these are not their real reasons (these real reasons being suppressed).

¹⁴ See Sect. 5.11. Partly in reaction to criticisms raised by other scholars, Perelman (1984) attempts to correct certain misconceptions surrounding the notion of *universal audience*.

Fig. 5.1 Premises that may serve as point of departure of argumentation



schemes can only be successfully employed in argumentation techniques if they are attuned to the premises of the evaluating audience, Perelman and Olbrechts-Tyteca first give an exposition of the premises that may serve as the *points of departure* or *objects of agreement* of argumentation.

The premises constituting the points of departure of argumentation are in the new rhetoric divided into two classes: premises relating to *the real* and premises relating to *the preferable*. In premises relating to what is real, the arguer lays a claim to recognition by the universal audience. This class of premises comprises facts, truths, and presumptions. Premises relating to what is preferable have to do with the preferences of a particular audience. This class comprises values, value hierarchies, and *loci* (see Fig. 5.1).

Facts and truths are premises that are treated as not being subject to discussion. *Facts* are statements about reality that are acknowledged by every rational being and require no further justification. The same goes for *truths*, be it that the latter term is used for more complex connections between facts. One has to accept, for example, that there is a certain configuration of geographical constraints, political divisions, and historical decisions on the basis of which someone can state “Madrid is the capital of Spain.” As soon as facts or truths are challenged or become arguable, their status is at stake and they cease to be facts or truths. The statement “The earth is flat,” for example, was for centuries endowed with the status of a fact but lost this status when scientific discoveries gave rise to doubting it. Today, the statement “The earth is round” is treated as a fact.

Presumptions are statements about what is the normal or usual course of events. They too are regarded as enjoying the acknowledgement of the universal audience. In contrast to facts and truths, however, it is expected, perhaps even assumed, that at some stage the statement involved will be confirmed. An example of a presumption is the statement that a person’s actions will say something about that person’s character. When such a presumption is used as a premise, everyone is taken to agree with it and it is expected that cases will occur which confirm the presumption.¹⁵

¹⁵ This example of a presumption concerning a person’s character and that person’s actions reappears in Perelman and Olbrechts-Tyteca’s taxonomy of argument schemes (1969, pp. 296–305).

Values are premises related to the preference of a particular audience for one thing, action, or condition as opposed to another.¹⁶ They serve as guidelines in making choices: “As personal safety is very important, I shall vote for the party that will provide more police.” Values are also a basis for forming opinions: “I prefer grape juice to cola because I like natural products.” The arguer does not only rely on values when making a choice between things, actions, or conditions but also when justifying a choice once made. In a great many cases, agreement concerning a certain course of action, for instance, can only be reached when there is agreement concerning the values related to that course of action.

The values upheld by a given audience can be used as a starting point for determining what that audience will and will not accept. The values adhered to may vary to some extent from person to person and from group to group. Sometimes, indeed, it is characteristic of a given audience that it cherishes certain values. With respect to a building project, an audience consisting of potential investors, for example, will characteristically apply the value of profitability, whereas an audience consisting of art lovers will characteristically apply the value of beauty. According to Perelman and Olbrechts-Tyteca, values that at first sight appear to be universal will lose their universality when they are defined more precisely. Everyone strives after good, but on closer inspection, different people have different ideas of what good is.

As a rule, *value hierarchies* are even more important premises in argumentation than the values themselves. Different audiences may adhere to the same set of values but to different value hierarchies. Since value hierarchies result from the relative weight people attribute to the values involved, they will vary from audience to audience more widely than the values themselves. Value hierarchies are often more characteristic of different audiences (and therefore more distinctive) than values. With respect to the building project mentioned above, both audiences may adhere to the values of profitability and beauty. However, the audience consisting of potential investors will characteristically attribute more weight to the value of profitability, whereas the audience consisting of art lovers will characteristically attribute more weight to the value of beauty. In general, as already implied, different audiences do not differ so much in the values they adhere to as in the way they arrange them in a hierarchy.

Value hierarchies, like values, generally remain implicit. Nevertheless, the arguer cannot simply ignore the audience's scaling of values. By presenting one value as subordinate to another, the arguer will hold up a value hierarchy to the audience that accords with the purpose of the argumentation, but this hierarchy should also accord with the audience's hierarchy. In trying to make this happen, the arguer exploits the fact that not all values are adhered to with the same intensity by

¹⁶ In linking the distinction between *facts and truths* on the one hand and *values* on the other so strongly to the status of premises for an audience, Perelman and Olbrechts-Tyteca differ from other philosophers who understand facts and truths as actual states of affairs in reality (“In France there are many vineyards”) and values as attitudes toward reality (“It is a good thing that there are many vineyards in France”).

all audiences at all times. For an audience, sometimes one value will predominate over another, and at other times, it will be the other way round – and other audiences may have different preferences.

Loci are premises that are used for ordering values.¹⁷ They express the preferences of a particular audience. It may, for example, be a *locus* for a particular audience that the enduring is preferable to the transitory. This *locus* can then be the basis for the value hierarchy in which friendship is placed above love because friendship is more enduring. *Loci* constitute an extensive store to be drawn on, which is a rich basis for the use of values and value hierarchies. Being of an extremely general nature, a *locus* may serve as an abstract justification of a statement used as a reason put forward in the argumentation addressed to a particular audience. For example, the reason advanced in “You should take the job offer you have rather than waiting for an offer which you may never get” can be justified by a *locus* of the existent: “A bird in the hand is worth two in the bush.”

Perelman and Olbrechts-Tyteca follow Aristotle in discussing *loci* of quantity and *loci* of quality. An appeal to a *locus* of quantity is made, for example, when we state that a particular course of action is to be preferred because the greatest number of people would then benefit from it: “The government ought to nationalize all those private estates and parks, so that they would be of some good to everyone.” And an appeal to a *locus* of quality is made, for example, when it is asserted that a certain course of action must be taken because it is the best of a number of options: “I know that a very great many students can’t stand multiple choice tests, but I still think they’re a good idea because there is no other way of telling as fast and as reliably whether required knowledge is there.”

Facts, truths, presumptions, values, value hierarchies, and *loci* can all function as objects of agreement. To serve as premises constituting the point of departure of argumentation, they need not always be stated explicitly in advance. In many cases, these starting points emerge during the course of the argumentation or can even only be detected in a closer examination of the process of argumentation afterward. But whether or not the premises serving as the point of departure are stated in advance, the argumentation will not be a success if the audience does not agree with these premises.

According to Perelman and Olbrechts-Tyteca, lack of agreement concerning the point of departure may occur at three levels: (a) the status of premises, (b) the choice of premises, and (c) the verbal presentation of premises. There is a lack of agreement about the status of premises if, for example, the arguer advances something as a fact which the audience still wants to see proven, like in “You keep saying that Laura is ill, but is she really?” or if the arguer assumes a value hierarchy that the audience regards as nonexistent, like in “Ann can say Bourbon is nicer than Scotch if she likes, but I think all whiskeys are much the same.” There is a lack of agreement about the choice of premises if, for example, the arguer uses

¹⁷ Perelman and Olbrechts-Tyteca prefer the Latin term *loci* (singular *locus*) to the Greek term *topoi* (singular *topos*).

facts that the audience does not consider relevant to the argument or would have preferred not to see mentioned, like in “Of course Harry has been to Indonesia, but what has that to do with what we are talking about?” Finally, there is a lack of agreement about the verbal presentation of premises if, for example, the arguer is presenting certain facts – acknowledged to be facts and agreed to be relevant by the audience – with a slant or in words which have connotations unacceptable to the audience, like in “You keep referring to terrorists while I should prefer to call them freedom fighters.” In practice, agreement may be lacking on more of the abovementioned levels at the same time.

The objects of agreement incorporated in the point of departure of argumentation are a crucial factor in the argumentation being successful. Arguers are therefore wise to consider carefully what status the audience is likely to ascribe to certain premises, to select the premises with great care, and to choose the right wording if they are made explicit. Arguers must not simply assume values that the audience does not subscribe to, state facts that the audience regards as immaterial, or use a phrasing the audience will regard as tendentious, since that would in all three cases place an obstacle in the way of success. The objects of agreement are themselves rhetorical tools by which argumentation can be made to succeed. Arguers are perfectly entitled to start their argumentation from premises to which the audience does not subscribe, but then they must realize that such premises require themselves supportive argumentation (and can therefore not be treated as common starting points).

5.6 A Taxonomy of Argument Schemes

Following on their discussion regarding the objects of agreement for argumentation incorporated in its point of departure, Perelman and Olbrechts-Tyteca consider a number of *argument schemes*. They regard these argument schemes as special species of topics (Greek, *topoi*; Latin, *loci*) in the sense in which this concept is understood in classical rhetoric. This means that they are viewed as general schemes that may help arguers to find arguments for their standpoints.

In line with their view that argumentation is aimed at moving the audience toward (greater) adherence regarding the standpoint (“thesis”) at issue, Perelman and Olbrechts-Tyteca are of the opinion that argument schemes can only be used effectively in argumentation techniques if they accord with the preferences of the audience or – in the case of argumentation addressed to the universal audience – with the preferences the arguer attributes to the rational beings that constitute the universal audience. In this sense, the new rhetoric provides a survey of ingredients for argumentation techniques that can be used to make theses (more) acceptable.

The argumentation techniques envisaged by Perelman and Olbrechts-Tyteca are characterized by two different processes: *association* and *dissociation* (see Fig. 5.2). Association consists in connecting elements the audience previously considered as separate and dissociation consists in splitting up into separate elements something that the audience previously considered as a whole.

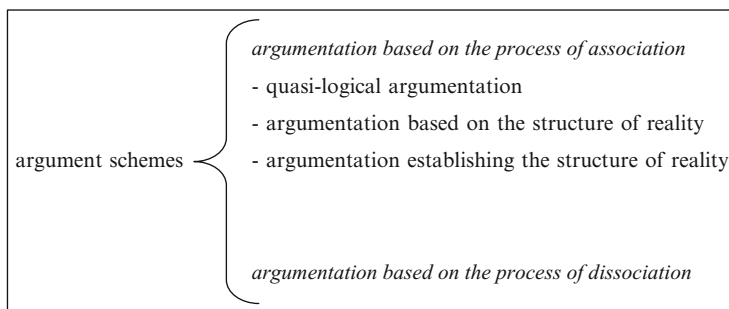


Fig. 5.2 Argument schemes as ingredients for techniques of argumentation

In putting forward argumentation based on the process of association, the arguer establishes a particular argumentative relation between two (or more) statements. When the arguer, for instance, states “It is good to read books because you will learn a lot from them,” he creates an argumentative relation based on the association of the previously separate elements “reading books” and “learning.” The use of the word “because” indicates that the statement that you will learn a lot from reading books has a justificatory function with respect to the statement that it is good to read books.

Argumentative relations based on association can be brought about in different ways. Perelman and Olbrechts-Tyteca distinguish between three types of associative relations: *quasi-logical* relations, relations *based on the structure of reality*, and relations *establishing the structure of reality*.

In argumentation based on the process of dissociation, an opinion is justified by a renouncement of a view previously held by the audience. The renouncement takes place by differentiating a concept from the concept of which it originally was a part. Dissociation always consists in separating something that is considered to be a conceptual whole into two (or more) elements.

In the next three sections, we will discuss the various argument schemes distinguished by Perelman and Olbrechts-Tyteca. We do so by paying attention to the three sorts of argumentation based on the process of association: quasi-logical argumentation (Sect. 5.7), argumentation based on the structure of reality (Sect. 5.8), and argumentation establishing the structure of reality (Sect. 5.9). Next, we concentrate on argumentation based on the process of dissociation (Sect. 5.10).

Before looking at each of these sorts of argumentation, we must point out that the examples Perelman and Olbrechts-Tyteca (and the present authors) use in the discussion are lifted from the context and situation in which argumentation normally takes place. Presenting examples in this way has the advantage that interpretations can be adapted to the purpose of the expose, but the disadvantage that not much attention can be paid to the interaction between arguments and between arguments and their contextual surroundings. Questions like “How does the order in which the arguments are presented influence their effect?” and

“How does one argument reinforce the other?” Perelman and Olbrechts-Tyteca address after they have presented their taxonomy of argument schemes. In so doing they stress that individual arguments are in practice always part of a larger entirety of mutually influencing elements. In their opinion, however, the synthetic aspects of argumentation can only be properly discussed if first an analysis of the individual arguments is provided.

5.7 Quasi-logical Argumentation

In the new rhetoric, the term *quasi-logical argumentation* designates argumentation in which the presentation gives the impression that the connection between the constitutive elements is of a logical nature. By presenting the standpoint and the argumentation in the way it is done in logic or mathematics, the arguer creates the illusion that the relation between these elements is just as compelling as the relation between the premises and the conclusion in the corresponding logical or mathematical arguments.

Perelman and Olbrechts-Tyteca observe that logic and mathematics have acquired considerable prestige by employing strictly formal relations between premises and conclusions. In putting forward quasi-logical argumentation, the arguer attempts to radiate the prestige of logic and mathematics to argumentation in ordinary language. However, formal demonstration is possible only in isolated and precisely delineated systems in which the terms are established unequivocally. In ordinary language, such precision is hardly ever achieved. The language forms that are used often have several meanings, which are not precisely defined and need not be the same for all language users. So, in order to give argumentation in ordinary language the appearance of containing formally valid arguments, it will be necessary to carry out certain manipulations. One of these manipulations is that the form of argumentation must be made to accord, as far as this is possible, with the logical form the arguer has chosen to imitate. The arguments must resemble homogeneous, congruent, and unambiguous premises – which might require a certain reduction or specification of meaning. Quasi-logical argumentation exploits the possibilities ordinary language offers in this regard. The adaptation – which need not be deliberate or conscious – must be as subtle as is necessary for the audience to be reached.

For quasi-logical argumentation to have the desired effect, it must be ensured that the audience recognizes the form of the argumentation as logically valid. To emphasize the similarity with argument forms used in logical or mathematical reasoning, the arguer should position the elements of the argumentation in such a way as to make it appear as if the connections between them are logical ones. It may also be stated explicitly that a logical argument form is presented. According to Perelman and Olbrechts-Tyteca, only by artifice is it possible to give the impression that there is a logical relation between the elements of an argumentation. Because of its artificial character, the attempt may fail. Presenting certain connections as logical ones may give rise to disagreement, hence require new argumentation,

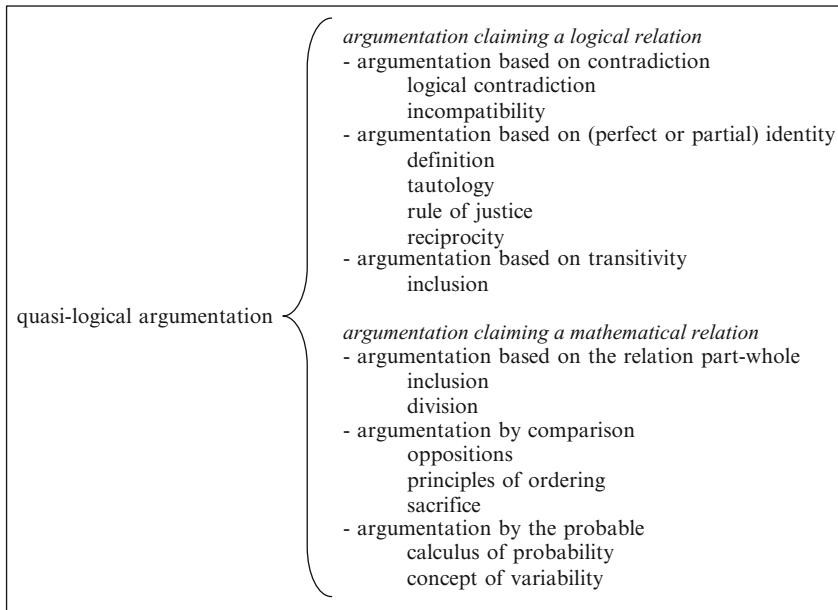


Fig. 5.3 Quasi-logical argumentation

so that the compelling nature of the argument is lost. The disagreement may relate to the reductions and specifications of the terms but also to the operations carried out to make the argumentation resemble a logical or mathematical argument form.

Depending on the form that is being imitated, or mimicked, Perelman and Olbrechts-Tyteca divide quasi-logical argumentation into two subtypes: argumentation claiming a *logical relation* and argumentation claiming a *mathematical relation*. The first of these subtypes includes argumentation based on *contradiction*, argumentation based on perfect or partial *identity*, and argumentation based on *transitivity*. The second subtype includes argumentation in which mathematical relations, such as the *part-whole* relations of inclusion (x is part of y) and division (x consists of y and z) or the relation of *comparison* (x is bigger/smaller than y), are an important element, as well as argumentation in which the mathematical concept of *probability* plays a role. In Fig. 5.3, we have listed the subtypes that Perelman and Olbrechts-Tyteca discuss.

Let us first look at an example in which a logical relation of contradiction is claimed: “The sanctity of all human life has always been a foremost principle of our party. It would be to go against that principle if we now went along with the proposal before us to legalize abortion.” In this example, the sanctity of all human life and the legalization of abortion are presented as contradictory, implying that to defend both things would involve a logical inconsistency. This is a form of quasi-logical argumentation, since the suggestion is that, logically speaking, maintaining both points of view is untenable and that therefore at least one of the two must be dropped.

Genuine logical contradictions can only occur in systems with unambiguously defined terms. Since in ordinary language the meanings of terms usually enable different interpretations, the charge of logical inconsistency can be avoided by giving at least one of the terms a different interpretation: "Deliberately ending a human life is indeed murder, but in the case of a 6-week fetus it is not yet a matter of human life." This maneuver is all the more possible because the statements used are rarely perfectly explicit and the terms employed are usually defined poorly or not at all. As a rule, then, the charge that someone is making contradictory statements is itself a form of quasi-logical argumentation, because the person who makes the charge pretends to apply logical criteria to the assessment of the argumentation.

The apparent contradictions in ordinary speech can usually be reduced to incompatibilities. These incompatibilities occur when one is not supposed to agree simultaneously with two or more statements that are made and has to make a choice, not because there is any formal contradiction but because simultaneously defending both statements goes against "the nature of things," in view of the way reality is constructed, a pertinent human decision, or the principles or values adhered to. Incompatibilities may result, for instance, from a confrontation of rules of law or moral rules. This becomes apparent, for example, when there is a confrontation between the rule that one must always tell the truth and the rule that one must not cause one's fellow humans unnecessary suffering. Incompatibilities depend less on particular characteristics of the language system that is used but on the views held by the audience. As the abortion debate example above shows, statements that for one audience are so clearly incompatible that they even appear contradictory may not even lead to an incompatibility for an audience with slightly different moral norms.

Next to argumentation in which some sort of contradiction plays a role, Perelman and Olbrechts-Tyteca describe many other types of argumentation in which a logical relation is claimed. A subgroup of argumentation based on perfect or partial identity, for instance, includes argumentation based on definitions, argumentation based on tautologies, argumentation based on the rule of justice, and argumentation of reciprocity. A subgroup of argumentation based on transitivity includes argumentation based on inclusion.

Instead of discussing the plethora of examples which Perelman and Olbrechts-Tyteca have provided of argumentation within these two subgroups of argumentation claiming a logical relation, we turn to an example of quasi-logical argumentation in which a mathematical relation is claimed: "Our club is bound by certain stipulations and therefore the members are also bound by those stipulations." This example hinges on a relation between the whole and its parts. Here the parts are compared with the whole that comprises them, and the parts are treated as being in a position equivalent to the whole. The only thing that is considered is the quasi-mathematical relation that enables an equation between the whole and its parts, so that it is possible to exploit the principle "what applies to the whole also applies to the parts."

The specific relation between the whole and its parts is not always one of equivalence. Since the whole contains the parts, the whole can also be regarded as more important than the parts. In this form of quasi-mathematical argumentation, the

superiority is assumed of the whole over one, or each, of its parts. The conclusion is then legitimized with “mathematical certainty” by the fact that the whole always contains the parts. Perelman and Olbrechts-Tyteca point out that this form of quasi-logical argumentation is closely related to the *locus* of quantity. The argument constitutes a backing for that *locus* – or is itself backed by it. This close relationship is expressed in the following example: “You would do better to buy the collected works rather than just *David Copperfield*, because it won’t cost much more and you’ll have all Dickens’s other books as well.”

Like they do in the case of quasi-logical argumentation in which a logical relation is claimed, Perelman and Olbrechts-Tyteca describe a great many types of argumentation in which a mathematical relation is claimed. A subgroup consisting of argumentation by comparison, for instance, includes argumentation making use of oppositions, argumentation that exploits quantitative or qualitative principles of ordering, and argumentation by sacrifice. A subgroup of argumentation by the probable includes argumentation employing the calculus of probability and argumentation based on the concept of variability.

Perelman and Olbrechts-Tyteca emphasize that in argumentative practice, logical relations may be perceived as mathematical relations and vice versa. They acknowledge also that there exist many more logical relations and mathematical relations than the ones they have covered in their descriptions, so that their taxonomy of quasi-logical argumentation is by no means exhaustive. From the examples that are given, however, it is already clear what they mean by quasi-logical argumentation and in what way such this type of argumentation can be divided into subtypes.

5.8 Argumentation Based on the Structure of Reality

The term *argumentation based on the structure of reality* designates argumentation in which an attempt is made to justify a thesis by connecting it with certain characterizations of reality held by the audience. In this type of argumentation, the arguer aims at getting a thesis approved by making an appeal to the way in which reality is structured.

There is no question of Perelman and Olbrechts-Tyteca adopting any ontological posture in describing this argument scheme. Neither do they try to give an objective description of reality nor are they expressing their views of the way in which the world is structured. They merely describe the manner in which in argumentation certain statements about the ordering of reality are used as objects of agreement in order to convince or persuade an audience. Explicitly or implicitly, such statements about reality or about particular relations in reality are then presented as facts, truths, or presumptions that are instrumental in the justification of theses.

In argumentation based on the structure of reality, the relation that is drawn between elements already accepted by the audience and the element that the arguer wishes to render acceptable conforms to the audience’s conception of reality. In discussing argumentation based on the structure of reality, Perelman and

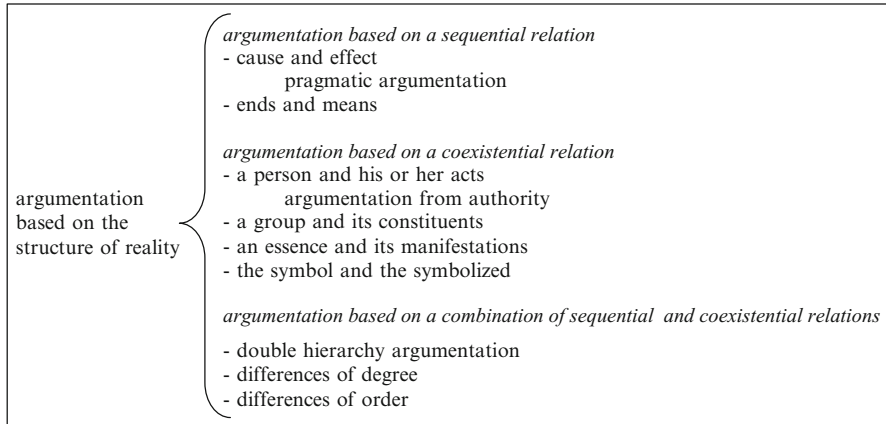


Fig. 5.4 Argumentation based on the structure of reality

Olbrechts-Tyteca distinguish two sorts of relations: *sequential* relations and *coexistential* relations. In Fig. 5.4 we have pictured what types of argumentation they discuss under these headings.

Sequential relations are relations pertaining to the order in which two or more elements of a series occur. Two consecutive facts or events may, for example, be presented as *cause and effect*: “Now that they are allowed to have a say, it has become total chaos.” Another way of presenting two consecutive events is as means and end: “Studying for this examination will enable me to obtain my Master’s degree.”

According to Perelman and Olbrechts-Tyteca, making a causal link between two facts or events allows for three types of argumentation. First, the causal link may attach two facts or events to each other. Second, it may reveal the existence of a cause. And third, it may show that there is an effect. Apart from these three prototypical types of argumentation based on a causal relation, Perelman and Olbrechts-Tyteca discuss a prominent type of argumentation based on the sequential relation between cause and effect that they call *pragmatic* argumentation.

In pragmatic argumentation, a verdict (positive or negative) concerning a certain action is justified by referring to the favorable (or unfavorable) consequences of that action. For example, a positive opinion of a proposed measure can be promoted by presenting the audience with a picture of its advantageous effects. The positive value attached to the effect must then be transferred to the event that caused it. This is what happens, for instance, if someone points out that digging up the road is something to be applauded, because then you can walk about without constantly being bothered by cars.

Pragmatic argumentation can only succeed if the causal relation between the two elements that are connected is evident and the positive value of the consequence speaks for itself, so that both can be accepted on the basis of “common sense.” Such an argument becomes effective as soon as the connection between the thesis being

defended and its favorable consequence is perfectly clear to the audience. In case the audience regards it as plausible that the thesis represents indeed a sufficient condition for the acclaimed consequence to actually materialize, the thesis will gain adherence. The arguer who uses pragmatic argumentation is, of course, out to downplay the importance of other conditions and less favorable consequences that might play a part.

A noteworthy type of argumentation based on a sequential relation between cause and effect is employed when an event is presented as the cause of another event. This kind of presentation will, for example, be used if the arguer wishes to convince the audience that a particular event should be disapproved of and is aware of the fact that the audience deprecates another event that can be related to the event at issue. Stamping the latter event as the natural consequence of the former, the arguer can then try to bring about a transfer of the negative opinion from the one event to the other by presenting the latter as the effect of the former and the former as the cause of the latter.

In the case of argumentation using a sequential relation between *means and end*, the connection between the facts or events involved is presented as a connection that is deliberately brought about (or to be brought about) by human agency. When using this type of argumentation, the arguer aims at establishing a transfer from the audience's approval (or disapproval) of the means to the audience's appreciation of the end: "You liked preparing the food, so now you should eat it." Or the arguer might want to establish a transfer from the audience's approval (or disapproval) of the end to their valuation of the means: "The Americans are well advised to withdraw their troops, because this will increase their goodwill in the rest of the world."

Other types of argumentation referring to a sequential relation of facts or events are the argument of *waste*, the argument of *direction*, and argumentation by means of *unlimited development*. Rather than elaborating on these specific subtypes of argumentation based on a sequential relation, we will now pay attention to the second type of argumentation based on the structure of reality, i.e., argumentation based on a coexistential relation.

Like with other types of argumentation, the arguer who puts forward argumentation based on a coexistential relation aims to bring about a transfer of approval from the accepted premise to the not yet accepted standpoint. The difference between argumentation based on a coexistential relation and argumentation based on a sequential relation lies in the nature of the relationship between the facts or events concerned. In the case of sequential relations, the facts or events that are related to each other are on the same level, the temporal order of the elements brought together being of primary significance. In the case of coexistential relations, the facts or events which are related are not on the same level. In the argumentation "He must be left wing, for he is wearing a red shirt," for example, the occurrence of the second fact is presented as having an explanatory force for the occurrence of the first, thus making the audience accept the standpoint involved in the first statement.

Perelman and Olbrechts-Tyteca distinguish several types of coexistential relations. In the first type, a link is drawn between *a person and his or her acts*: "That fellow must be an ubiquist, he always agrees with everyone." A second type of

coexistential relation hinges on the connection between *a group and its constituents*: “That girl must be a reliable person; she has been working for my colleague for many years.” A third type makes a link between *an essence and its manifestations*: “This table must have been fabricated in the 18th century, look at those rich embellishments.”

According to Perelman and Olbrechts-Tyteca, the relation between a person and that person’s actions is the prototype of a coexistential relation. In argumentation of this type, it is assumed that the person and his or her actions can be seen as entities that are immediately related to each other: The person expresses himself or herself in his or her actions and the actions are manifestations of the person. Argumentation in which a relation is drawn between a person and that person’s acting can either be designed to bring about a transfer of acceptability from an opinion about a person already held by the audience to an opinion about particular acts of that person not yet accepted by the audience, or vice versa.

There is not the same inextricable relation between a person and that person’s actions as there is between a thing and its attributes. The relationship between a thing and its attributes is, as it were, inherent in the nature of things, while the relationship between a person and that person’s actions must in principle be reassessed on each new occasion. The association of a person and that person’s acts is of a reciprocal nature. In order to interpret a person’s acts, a certain concept of the person is required, but the concept one has of the person is in turn in the first place derived from the acts. A person may change to some degree, and the person’s image with the audience may be altered by new actions on the part of that person, so that the actions themselves will also be evaluated differently. This evaluation of a person and his or her actions will always be based on the audience’s picture of reality at the particular time in question.

A special case of argumentation based on the coexistential relation between a person and his or her acts is argumentation *from authority*. This is argumentation in which certain judgments or actions of a particular person or organization are used as evidence for the acceptability of the thesis being defended. By connecting the standpoint the arguer wishes to defend to the opinion of someone whom the audience regards as an authority, the arguer hopes to bring about a transfer of the positive value attached to the authority’s opinion to their own standpoint: “I feel – and Russell feels the same way, as it happens – that one must always first try to understand a text properly before one can start a critical reading of it.” The argumentative force of such an argument from authority depends entirely on the prestige vested by the audience in the person or organization that is to serve as the authority.

When using argumentation based on a coexistential relation between an essence and its manifestations, the arguer treats a certain phenomenon as a specific manifestation of a certain essence (which may also find expression in other events, things, beings, or institutions). A related type of argumentation occurs if it is brought to the audience’s notice that a certain phenomenon always goes together with something else, like in “Fat people are always jolly,” and also, if it is brought to the audience’s notice that something always has particular features, like in “Free public transport just means that we shall all be paying for it.” Of course, it applies to all such types of argumentation that they only have a chance of

succeeding if the audience acknowledges the positive (or negative) value attached to the element serving as the premise of the argumentation as well as the correctness of the relation drawn between the elements. It can, for instance, only be shown that a certain painting is essentially “romantic” if the audience subscribes to the distinctive features attributed by the arguer to the painting and agrees with the way in which these features are connected with the intended characterization.

Another type of argument referring to the coexistential relation between facts or events is the argument that makes use of the relation between *the symbol and the symbolized*. According to Perelman and Olbrechts-Tyteca, unlike a sign, a symbol is not purely conventional. With some hesitation, they name the relation between a symbol and the thing a relation of *participation*. They mean to express in this way that the symbol and the thing may not coexist in spacio-temporal reality but are to be seen as mutual participants in a mythical or speculative reality that transcends space and time.

Perelman and Olbrechts-Tyteca conclude their discussion of argumentation based on the structure of reality with an account of more complex types of argumentation based on a combination of sequential and coexistential relations. Under this heading, apart from argumentation based on *differences of order* and argumentation based on *differences of degree*, they describe a type that is called *double hierarchy* argumentation. This type of argumentation exploits the fact that hierarchies, apart from being objects of agreement in the point of departure of argumentation, can themselves also be the subject of a discussion. Double hierarchy argumentation is aimed at supporting the claim that a certain hierarchy is well founded or that some specific element occupies a particular place within the hierarchy. Doubly hierarchy argumentation occurs when a disputed hierarchy is defended by making use of another hierarchy. Perelman and Olbrechts-Tyteca provide the following example: “If it pleases the barbarians to live from day to day, our own purpose must be to contemplate the eternity of the centuries” (1969, p. 341). In the example, the hierarchy between “contemplation” and “living from day to day” is defended by recourse to the hierarchy between “we” and “the barbarians.”

5.9 Argumentation Establishing the Structure of Reality

The term *argumentation establishing the structure of reality* is meant to designate argumentation in which the connections between the elements are presented in such a way that they evoke a picture of the structure of reality that is new to the audience. The plausibility of the structure then invests the thesis defended by this type of argumentation with a certain plausibility of its own.

Perelman and Olbrechts-Tyteca distinguish two ways in which the arguer can establish the structure of reality. The arguer can either resort to a *particular case*, which is then presented as reflecting a more general structure or relation of facts or events existing in reality, or suggest an *analogy* between a structure or relation already acknowledged by the audience and the one that the arguer wants the

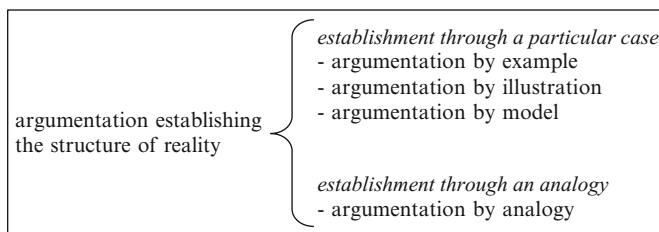


Fig. 5.5 Argumentation establishing the structure of reality

audience to accept. In Fig. 5.5 we have listed the two main types of argumentation establishing the structure of reality as well as the names of the subtypes that Perelman and Olbrechts-Tyteca distinguish.

Argumentation establishing the structure of reality through a particular case may take the form of argumentation by *example*. A specific case is then taken as the starting point for a generalization about reality. The arguer will only get the audience to accept the generalization if the audience is acquainted with the example or at least acknowledges it as correct and agrees that it is possible to make generalizations on the basis of the example presented.

In order to make it possible to arrive at the introduction of a general rule, the cases that are to serve as examples must in the opinion of the audience have the status of facts. The moment they are challenged, the generalization is jeopardized. Incidentally, discussion about the status of the cases that are to serve as the starting point for the generalization can be quite useful if the arguer can easily demonstrate their factual nature, since such a harmless discussion distracts the attention from the manner in which the generalization is made.

Usually the number of examples needed to justify the generalization cannot be predicted, because the ambiguity of natural language use provides many escape routes. It is often possible to take refuge in an exception. Suppose one puts forward an argument by means of example which says that women make better interviewers than men because you only have to look at the interviews by such renowned female interviewers as Oriana Fallaci, Barbara Walters, or Oprah Winfrey to see that they can get much more out of their subjects than their male colleagues. If someone else then objects that this takes no account of someone like David Frost, one has little option but to call Frost an exception to the rule, assuming that having acknowledged the objection, the generalization can still be maintained.

In argumentation establishing the structure of reality through a particular case, the case involved need not necessarily be an example. Perelman and Olbrechts-Tyteca describe two other possibilities, the one being an *illustration* and the other a *model*.

Rather than creating a new structure of reality, an illustration lends support to a previously established regularity. An illustration that appeals to the imagination can ensure that a rule or principle that has slipped into the background is recalled to full "presence" in the audience's consciousness. The difference between argumentation by illustration and argumentation by example lies in the status of the rule or principle concerned. While an example is calculated to establish a generalization

that is relatively new to the audience, an illustration is supposed to reinforce the audience's approval of a generalization that is already known and more or less accepted. In line with this difference, an example will often be presented in a short, clear, and unembellished manner, whereas an illustration will usually be presented in a more expanded way. As the distinction hinges upon whether or not the audience really acknowledges the generalization at issue, for an analyst, it may be difficult to decide whether an argument should be reconstructed as an illustration or as an example.

Argumentation by reference to a model, say Perelman and Olbrechts-Tyteca, is primarily an attempt to influence the audience's actions by encouraging imitation. By starting from a generally respected model, the arguer attempts to make the prestige of the model reflect on the behavior that is recommended, in the hope that this will prove sufficient reason for the audience to imitate the model. A model may consist of an idealized contemporary but may also be a historical figure or a perfect being.

Argumentation establishing the structure of reality may also take the form of argumentation by *analogy*. In that case, the arguer points out a similarity between the structure of elements mentioned in the thesis and a structure of elements that is not doubted but recognized by the audience. By suggesting this similarity, the arguer tries to increase the plausibility of the thesis by creating a link between the relation of facts or events in the thesis and facts or events whose relation is already accepted. Thus, the arguer makes an attempt to equate the structure of what is being discussed, the *theme*, with the structure of something already known to the audience, the *phoros*. This is what happens, for example, if someone says that from the lack of discipline and the tolerance shown toward immorality in modern Western society, it is clear that this society is on the point of collapsing (= *theme*), because the Roman Empire was likewise close to ruin when people lost their sense of order and discipline and were tolerant of immoral behavior (= *phoros*). Schematically, an argument from analogy looks like this:

$$\begin{array}{lcl} \text{structure (theme)} & = & \text{structure (phoros)} \\ \text{term 1 (theme) : term 2 (theme)} & = & \text{term 1 (phoros) : term 2 (phoros)} \end{array}$$

In this example, the relation between the moral decline of modern western society (*theme* term 1) and the collapse of modern western society (*theme* term 2) is equated with the relation between the moral decline of the Roman Empire (*phoros* term 1) and the collapse of the Roman Empire (*phoros* term 2).

Examples of analogy are not difficult to find. A striking one, where *phoros* and *theme* – as is characteristic of a prototypical analogy – are taken from different spheres, is that drawn by Karel van het Reve, a Dutch specialist on Russian affairs writing in the 1970s:

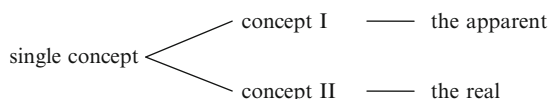
One thing that has been too little taken into account is man's capacity for recuperation. Just as an insect can be made resistant to DDT, so can man be made resistant to an ideology, and in the same way: by continuously exposing him to very high doses of it. And just as with the insect, there are at first millions of victims, but as time passes the treatment loses its effectiveness, and you find in the survivors that total immunity which the average Russian intellectual has to Marxism. (van het Reve 1977, p. 8)

Finally, Perelman and Olbrechts-Tyteca propose to consider the concept of *metaphor* as derived from the concept of *analogy*. After having given several examples, they conclude their description of argumentation establishing the structure of reality by remarking that metaphors may serve an argumentative purpose and that it is possible to study them fruitfully from the perspective of argumentation theory.

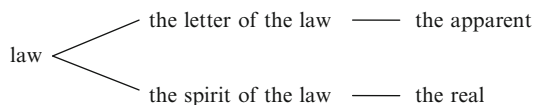
5.10 Argumentation by Dissociation

Alongside the argument schemes just discussed, all of which involve the process of association, Perelman and Olbrechts-Tyteca distinguish an argument scheme of a very different kind that involves the process of dissociation. In putting forward *argumentation by dissociation*, the arguer introduces a division into a concept that the audience previously regarded as one. In practice, this means that a concept is differentiated from the concept that it was originally part of.¹⁸

The result of a dissociation is that a single concept is split into two concepts, one of which is then for argumentative purposes associated with the *apparent* (i.e., the peripheral or false aspect of the original single concept) and the other with the *real* (i.e., the central or true aspect of the original single concept). Schematically, argumentation by dissociation looks like this:



By splitting up the single concept of *law*, for instance, into the concept of the *letter of the law* and the *spirit of the law*, the arguer may defend a certain ruling by stating that it is in accordance with the spirit of the law. In this case, the concept of the *letter of the law* is associated with the *apparent*, and the concept of the *spirit of the law* is associated with the *real*. Schematically, this example of argumentation by dissociation looks like this:



Since argumentation by dissociation involves an association of one of the two concepts with the *apparent* and the other of the two with the *real*, it always involves the introduction of a value hierarchy that serves the argumentative purposes of the arguer. In most cases, the concept associated with the *apparent* will be considered less valuable than the concept associated with the *real*. But this does not necessarily have to be the case. When, for instance, Maria Montessori's granddaughter defended her grandmother against an accusation of being vain by saying:

¹⁸ Our explanation below is based on van Rees (2009, pp. 3–9).

“She loved beautiful clothes, but she was not vain,” the concept that is associated with the *apparent* is considered to be of a higher value than the concept associated with the *real*.

As to the relation of the term designating the original concept to the terms designating the two concepts into which the original concept has been divided, several possibilities exist. In the example regarding the law, the term designating the original concept is given up in favor of two new terms. But it may also be the case that the term designating the original concept is used in order to designate one of the two concepts resulting from the dissociation. Consider the following argumentation: “You should not buy work from these artists, because what they produce is not art, but subsidized art.” In this example, the single concept of *art* is differentiated by placing a new term alongside the old one, thereby introducing a hierarchy between the concepts along the lines of the distinction between the *apparent* and the *real*.

According to Perelman and Olbrechts-Tyteca, dissociation is a creative process that is of major importance for all original thought. Time and time again, thought has been taken a step further by the dissociation of supposed unities into separate concepts. Within the framework of an arguer trying to elicit an audience’s approval of a particular opinion, however, it is crucial that the dissociation introduced by the arguer is acceptable to the audience the arguer wishes to convince. Whether the dissociation was thought of by the speaker, or has been borrowed from the thinking of others, is of secondary importance. Thus, the dissociation of de Saussure’s *langue* and *parole* or Chomsky’s *competence* and *performance*, even though they did not introduce these distinctions themselves, can be a useful tool to language teachers wishing to teach their pupils to think about linguistic phenomena in a new manner.

To conclude this overview of argument schemes as they are described in the new rhetoric, we must emphasize that they have, as it were, been lifted from a synthetic whole. Although it is possible to distinguish them analytically, in practice they will occur together and interact with each other, that is, reinforce or weaken each other. In fact, according to Perelman and Olbrechts-Tyteca, every association implies dissociation, and vice versa. At the same moment that diverse elements are united in a whole by means of association, a dissociation takes place that differentiates these elements from the neutral background of which they were hitherto a part. The two processes are complementary and take place simultaneously. It is a matter of technique to place one of the two in the foreground and to shift into the background whichever one appears at that moment to offer fewer rhetorical possibilities.

In practice, different argument schemes will occur together, and they may also be jumbled up and combined with each other, the effect of one scheme influencing the effect of the next. Then again the order in which they are used is a factor that helps to establish the rhetorical soundness of the argumentation. Another factor affecting the rhetorical soundness is the way in which a person arguing succeeds in responding to intermediate reactions from the audience. Perelman and Olbrechts-Tyteca observe the influence of these factors, but they do not examine them in any depth.

They do not describe the manner in which argumentative discourse takes place in practice (e.g., the specific roles of the interlocutors, the stages by which a discussion develops, the psychological mechanisms on which the effects of certain argument schemes depend) but provide a general outline of the basic elements that play a part in influencing an audience rhetorically by means of argumentation.

5.11 Recognition and Elaboration of the New Rhetoric

Perelman and Olbrechts-Tyteca's new rhetoric evoked many reactions from other scholars. Some of them provide interpretations or clarifications of the concepts expounded, others put forward criticisms regarding the theory, and still others make use of insights introduced by the authors of the new rhetoric in their own theorizing or in analyzing specific instances of argumentative discourse. In this section, we provide a short overview of writings of other scholars on various aspects of the new rhetoric.

General works on rhetoric, such as Conley (1990), Bizzell and Herzberg (1990), Kennedy (1999), and Foss et al. (2002), dedicate a chapter to the new rhetoric. Foss et al. (2002), for example, who describe the personal and intellectual background of Perelman and Olbrechts-Tyteca, provide a clear exposition of the most important concepts of the new rhetoric – audience, starting points, presence, techniques of presentation, techniques of argumentation – and discuss criticisms of the theory and defenses against criticisms.

There are also works that are dedicated entirely to the new rhetoric. Gross and Dearin (2003), for example, focus on the philosophical backgrounds of the new rhetoric. They also provide a clear exposition of Perelman and Olbrechts-Tyteca's theoretical framework, covering not only their insights concerning argument schemes but also those concerning arrangement and style. Frank (2004) gives a description of Perelman and Olbrechts-Tyteca's influence on studies in the field of law, argument, and rhetoric and indicates their "relevance in the new millennium" (p. 276). Gage (2011) includes essays by Warnick, Fahnestock, Gross, Koren, Dearin, and Crosswhite in his volume of papers presented at a conference on Perelman's legacy. This volume also includes an English translation of the recollections of Perelman's daughter, Noémi Perelman Mattis.

In spite of an initial denigration of Perelman and Olbrechts-Tyteca's rhetorical approach, the new rhetoric has been a major source of inspiration to scholars working in the field of philosophy.¹⁹ Some of them examine the philosophical backgrounds or underpinnings of the theory. Kluback (1980), for one, describes the new rhetoric as a philosophical system. He emphasizes that Perelman and Olbrechts-Tyteca's relativism regarding the reasonableness of argumentation springs from their firm belief, inspired by Dupréel, in democracy and philosophical pluralism. Dearin (1989) and Gross and Dearin (2003) provide an extensive

¹⁹ See Johnstone Jr. (1993) and Tindale (2010).

discussion of the philosophical foundations underlying the new rhetoric, including Perelman's general conception of philosophy, his theory of knowledge, the judicial model of reasoning,²⁰ and the concept of rhetorical reasoning.

Other scholars examine the relationship between the new rhetoric and extant philosophies. Examples of this type of research are Tordesillas (1990), who examines the relationship between the new rhetorical concept of *argumentation* and the views common in ancient philosophy (especially the sophists, Plato, and Aristotle), and Frank and Bolduc (2003), who provide a commentary and translation of Perelman's views on the relation between the philosophical starting points of the new rhetoric and those of "first philosophies" and "regressive philosophy."

There are also scholars who discuss the differences and commonalities between the new rhetoric and other philosophies in light of their critical account of the methodology that underlies the new rhetoric or their own proposals for a revision of some of its central concepts. An example of the first type of research is Cummings (2002), who aims at showing that the way of theorizing used in the new rhetoric is inherently problematic by making a comparison between the new rhetoric and the development of Frege's views on logic. An example of the second type of research is Morresi (2003), who aims at remodeling questions concerning tautology, analogy, philosophical pluralism, and the concept of audience by exploring the similarities between the new rhetoric and Hegel's dialectic against the background of Perelman and Olbrechts-Tyteca's rejection of Hegel's concept of dialectic.

Still other scholars use insights from the new rhetoric to illustrate their own point of view regarding certain philosophical issues. Grácio (1993), for instance, criticizes Gadamer's hermeneutic conception of philosophy from the perspective of the new rhetoric. Wintgens (1993) aims at determining the meaning of "reasonableness" by exploring the philosophical and anthropological dimension that is, in his view, present in the new rhetoric. Maneli (1994) views Perelman's theory of argumentation as "a new social philosophy and a critical instrument for social reform" (p. 115). Koren (2009) defends the view that the new rhetoric enables the French school of discourse analysis to readjust its theoretical positions concerning the ethics of discourse.²¹

The new rhetoric not only inspired scholars working in the field of philosophy but also had a strong influence on scholars working in the field of law. This influence emanated in part from Perelman's own writings on legal argumentation, such as *The idea of justice and the problem of argument*, in which Perelman (1963) articulates his philosophy of legal argument, and *Logique juridique, nouvelle rhétorique* [Judicial logic, new rhetoric], in which Perelman (1976) gives a description of the argumentation techniques that play a role in legal argumentation.²²

²⁰ For the influence of the judicial model of reasoning on the new rhetoric, see also Abbott (1989).

²¹ We refrain from going further into philosophical studies based on Perelman in which argumentation theory does not play a major part. Examples of this type of research are Meyer (1982, 1986a, b, 1989) as well as a great many contributions to Haarscher (1993).

²² Starting from Perelmanian criteria, Corgan (1987) proposes an analysis of legal arguments that uses the universal audience as a critical tool.

Golden and Pilotta (1986) edited a volume consisting of essays in which the authors discuss applications of Perelman's insights to the field of law. Among them are Haarscher (1986), who discusses Perelman's ideas concerning justice; Makau (1986), who views the rhetorical model of rationality as an alternative to the mathematical model; and Rieke (1986), who discusses the use of the theoretical tools of the new rhetoric for analyzing the legal decision process. In another volume of essays, edited by Haarscher (1993), the authors concentrate on the implications of Perelman's ideas for legal theory and legal philosophy.²³ Holmström-Hintikka (1993), for instance, discusses practical reasoning in law. Pavčnik (1993) points out the importance of a theory of practical reasoning to the study of law.²⁴

In North America, the new rhetoric has attracted the attention of scholars working in the field of (speech) communication. According to them, the concept of *audience* and the insights concerning argumentative strategies are useful tools for analyzing legal communication. Makau (1984), for instance, describes how the Supreme Court secures adherence from a composite audience consisting of a variety of legal and nonlegal groups. Schuetz (1991) analyzes the use of value hierarchies, precedents, and presumptions in a Mexican legal process.²⁵

A great many argumentation theorists have elaborated on the new rhetoric, applying Perelman's insights to their own areas of interest.²⁶ Several of them were attracted to the new rhetoric's conception of an audience, often with a critical eye for its problems. This conception has been the focus of attention in various publications, in particular the distinction between a particular audience and a universal audience (in some interpretation or other). Among the interpretations given of the two kinds of audience are those by Golden (1986), Dunlap (1993), Wintgens (1993), Crosswhite (1996), Gross (1999), Warnick (2001), Aikin (2008), Yanoshevsky (2009), and Jørgensen (2009).²⁷ Golden emphasizes the critical use that can be made of the concept of a universal audience. Dunlap relates it to Isocrates's "competing image" of an ideal audience, which embodies the ideals of antique Greek culture. Wintgens argues that a better understanding can be achieved of Perelman's view of reasonableness, and what is

²³ Another such collection is Haarscher and Ingber (1986).

²⁴ Among other scholars who discussed the connection between the new rhetoric and legal philosophy are Alexy (1978, pp. 197–218), Maneli (1978), and Wiethoff (1985). For a collection of Perelman's philosophical essays on the concept of justice, see Perelman (1980).

²⁵ For nonjudicial uses of Perelman's concept of *loci*, see, for instance, Cox (1989) and Wallace (1989), who wrote about developing a modern system of rhetorical invention.

²⁶ See, for instance, Schiappa (1993) on arguing about definitions and Koren (1993) on discursivity and argumentation in the French press.

²⁷ Other studies of the concept of a universal audience are, for instance, Anderson (1972), Crosswhite (1989), Ede (1989), Fisher (1986), Golden (1986), Ray (1978), Scult (1976, 1985, 1989), Oakley (1997), Gross and Dearin (2003, pp. 31–42), and Tindale (2004, pp. 133–155).

meant by arguers constructing their audience, by connecting the concept of a universal audience with that of the *generalized other* that is part of the theory of symbolic interactionism developed by the pragmatist George Herbert Mead.²⁸ Warnick explains the relation between conviction and the notion of a universal audience. Aikin provides an account of the notion of universal audience that avoids the objections that this notion is either incoherent or too empty to constrain. Yanoshevsky explores the new rhetoric's concepts of audience to achieve a better understanding of the Internet audience in the specific context of French and American presidential elections. Jørgensen compares Gross's and Crosswhite's explanations of how politicians address the universal audience and their respective implications for evaluating the argumentation. She then argues that although Gross provides a more immediately applicable theory, Crosswhite's interpretation recommends itself for deliberative rhetoric by virtue of its wider scope.

Crosswhite (1993) uses the distinction between a universal and a particular audience to deal with the problem of the fallacies in a rhetorical fashion. Rather than as violations of "formal" or "quasi-formal" rules, fallacies arise, according to Crosswhite, when the arguer mistakes a particular audience for a universal audience.²⁹ To determine whether an argument is a fallacy, Crosswhite thinks, we first have to know to what audience it is addressed and how it is understood. Some other publications are also devoted to the study of fallacies from a rhetorical perspective. A remarkable contribution has been made by Goodwin (1992), who connects the Perelmanian concept of dissociation with Rescher's idea of *distinction* as a *dialectical countermove* and examines then how current arguments against the standard treatment of fallacies are underpinned by distinctions that challenge previously formulated distinctions.

There are also authors who elaborate on specific concepts of argument schemes described in the new rhetoric. Dearin (1982) scrutinizes the concept of quasi-logical argumentation, and Measell (1985) discusses analogy argumentation. Schiappa (1985) applies the concept of dissociation. Goodwin (1991) extends the concept of dissociation in order to investigate how distinctions may reconstruct social values, hierarchies, and concepts of the real. In studying the use of dissociation in argumentative discussions, van Rees (2005, 2006, 2009) complements the new rhetoric's monological account of dissociation with a dialectical account of this technique. Taking the integrated pragma-dialectical theory of argumentation as a starting point, she provides a theoretical account of dissociation and presents several analyses of strategic maneuvers of discussants that involve this technique (see Sect. 10.11 of this volume).

²⁸ According to the view of symbolic interactionism, rather than individual and coincidental intentions and reactions, speakers attribute to their interlocutors the intentions and reactions of a "generalized other" who shares the basic rules of their social community.

²⁹ There is a resemblance here with Walton's (1992d) "dialectical shifts," but Crosswhite concentrates on audience-shifting and Walton on purpose-shifting.

Some more topics central to the new rhetoric have been given special attention by other scholars. We mention just a few of the authors who have explored them. Farrell (1986), for one, studied the relation between reason and rhetoric. McKerrow (1982) and Laughlin and Hughes (1986) go into Perelman's position on the rational and the reasonable. So does Rieke (1986), who has been mentioned earlier in the context of judicial justification. McKerrow (1986) focuses on pragmatic justification. Perelman's theory of values is discussed by Warnick (1981) and by Walker and Sillars (1990). The universal aspects of values are examined by Eubanks (1986). Arnold (1986) argues for joining Perelman's theory of argumentation with contemporary psychological theories of practical communication. Nimmo and Mansfield (1986) emphasize the relevance of the new rhetoric for the study of political communication. Pilotta (1986) stresses Perelman's alignment with the critical school. Mickunas (1986) discusses Perelman's ideas of justice and political institutions, and Kienpointner (1993) the empirical relevance of the new rhetoric. According to Tindale (1996), the new rhetoric is a particularly suitable candidate for grounding the logical in a rhetorical account of argumentation, with its fuller treatment of context and richer notion of relevance.

There is an abundance of other argumentation studies in which the new rhetoric serves as a starting point. We can mention only a selection of them. Karon (1989) examines the rhetorical concept of *presence*, and Graff and Winn (2006) offer a detailed analysis of the concept of *communion*, which in their view is sorely in need of excavation. Concentrating on the concept of *logos*, Amossy (2009b) aims at showing how insights from the new rhetoric allow for an integration of argumentation studies in linguistic investigations, more specifically in discourse analysis. Livnat (2009) applies the new rhetoric's notion of *fact* to the concept of a *scientific fact*. Haarscher (2009) analyzes the rhetorical strategies of creationists in their debate with Darwinists by making use of Perelman's notion of *pseudo-argument*, an argument made by someone who is not really convinced by the premises he uses to gain the adherence of a certain audience. Pearce and Fadely (1992) analyze the quasi-logical framework of the address in which Bush endeavored to gain compliance for his justification of his actions at the beginning of the Persian Gulf War. Leroux (1994) combines Burke's and Perelman and Olbrechts-Tyteca's paradigmatic concept of *style* to show how rhetorical devices ("figures") advance the argument and how the audience is intended to apprehend the meaning and action ("form") of the discourse in Luther's sermon *Am Neujahrstage* [On New Year's Day]. Walzer et al. (1999) provide an analysis of the Earl of Spencer's "Address to Diana" from the perspective of the new rhetoric. Macoubrie (2003) gives an operationalization of the new rhetoric's concept of argument that may be used in the analysis of the logics of argumentation emerging in group decision-making. Warnick (2004) uses insights from the new rhetoric in analyzing a controversy in the field of artificial intelligence. Finally, Danblon (2009) offers a discussion of Perelman and Olbrechts-Tyteca's notion of a *pseudo-argument*, and Plantin (2009) deals with the new rhetoric's treatment of *figures of speech* and more broadly with the place of figures in argumentation theory.

Apart from all these publications by other scholars, much of Perelman's own later work constitutes an effort to elaborate on the new rhetoric.³⁰ We shall not discuss these writings here but refer instead to several bibliographies.³¹

5.12 Critical Appreciation of the New Rhetoric

Next to a great deal of recognition and constructive efforts at elaboration, in the reception of the new rhetoric, some critical appreciation can also be noted. In addition to their high regard for Perelman and Olbrechts-Tyteca's rhetorical enterprise,³² pragma-dialecticians in particular have expressed some concerns about certain aspects of the theorizing.³³ They did so in various publications, especially in the handbooks in which they presented, by themselves or together with others, an overview of the state of the art in argumentation theory (e.g., van Eemeren et al. 1978, 1981, 1984, 1986, 1987, 1996). Other scholars have advanced additional criticisms. To conclude our discussion of the new rhetoric in this chapter, we briefly summarize the main points of concern.

First of all, the new rhetoricians underestimate the possibilities logic has in store for covering argumentation. The manner in which Perelman and Olbrechts-Tyteca (1969) turn against "modern formal logic" is in fact curious. During the past hundred years, they observe, logic has gone through "brilliant developments," but these developments have resulted in a restriction of the field that is covered, "since everything ignored by mathematicians is foreign to it" (p. 10). According to Perelman and Olbrechts-Tyteca, argumentation theory must investigate the whole field disregarded by logicians, thus encompassing the entire area of "non-analytic thought." Without considering logic's great potential for broadening its scope and further development (see Chap. 6, "Formal Dialectical Approaches") and the considerable advantages a formal approach can have – witness, for instance, the

³⁰ See, for instance, Perelman (1970, 1982).

³¹ A collection of essays published by the Centre National Belge de Recherches de Logique (1963) contains a "Bibliographie de Ch. Perelman" (pp. 604–611) consisting of 93 publications in various languages published by Perelman between 1931 and 1963. Perelman et al. (1979) contains a bibliography that includes translations of works by Perelman published between 1933 and 1979 (pp. 325–342). Foss et al. (2002) provide a selected bibliography of the most important books written by Perelman and Olbrechts-Tyteca, together and separately (pp. 109–111). Gross and Dearn (2003) present a selected bibliography of Perelman's 11 most important books, 25 most important articles, and one interview (pp. 157–159). Finally, Frank and Driscoll (2010) present a bibliography of the "New Rhetoric Project" devoted to the maintenance of Perelman and Olbrechts-Tyteca's intellectual legacy.

³² Van Eemeren (2010) points out that there are close connections between the new rhetoric and the extended pragma-dialectical theory of argumentation, especially with regard to the study of strategic maneuvering (pp. 31–32, 75–76, 110–122). See Sect. 10.8 of this handbook.

³³ Reactions to some of the criticisms raised here are given in Warnick and Kline (1992) and Frank (2004).

current use of argumentation theory in artificial intelligence (see Chap. 11, “Argumentation and Artificial Intelligence”) – they just declare formal logic irrelevant to the study of argumentation.

A more specific problem created by the outright rejection of logic is, according to the pragma-dialecticians, that it is not clear in what way in the new rhetoric logically valid arguments occurring in ordinary argumentative discourse should be dealt with (van Eemeren et al. 1996, p. 120). These arguments are compelling to those who accept the rationality norms of logic, and perhaps even for the universal audience, so that there is no reason for not considering them. The only possibility for doing so however seems to be to treat them as “quasi”-logical argumentation, in spite of the inadequacy of this term and its undesired negative connotations.

A second kind of criticism is that by concentrating fully on the standards of reasonableness of the audience, all external standards for resolving a difference of opinion on the merits are neglected (van Eemeren et al. 1996, pp. 119–122).³⁴ This may lead to problems when judging the quality of the process of argumentation or when the parties do not agree about the standards of reasonableness. Perelman and Olbrechts-Tyteca adhere to a purely “anthropological” (“emic”) philosophy of reasonableness, or concept of rationality, in which the soundness of argumentation is equated with the degree to which the argumentation is well suited to those for whom it is intended, while some others – such as the pragma-dialecticians – would prefer a “critical” (“etic”) philosophy of reasonableness, which requires argumentation to be not only “intersubjectively valid” but also “problem-valid” (see Sects. 3.9, 10.3, and 10.7).³⁵

The introduction of the universal audience does not solve the problem that the acceptability of argumentation is made relative to an audience, since the variation is eventually tied to the choice made by the arguers, without any guarantee that the result will be more problem-valid.³⁶ Arguers are after all free to construct their own universal audience. According to the pragma-dialecticians, the notion of a universal audience therefore remains problematic. This is part of the explanation of why in the new rhetoric the fallacies captured in the traditional list cannot be dealt with uniformly – another reason why their treatment in the new rhetoric is questionable being, of course, that external standards of problem-validity relating to resolving differences of opinion on the merits are lacking (see van Eemeren and Grootendorst

³⁴ According to some, standards of reasonableness are always, at least partly, defined by a social contract, such as the law, or other external restrictions. Still others think that there are objective (absolute and universal) standards for rationality and truth.

³⁵ In this connection, it is noteworthy that Perelman and Olbrechts-Tyteca (1969) nevertheless introduce at several places normative elements in their theory, such as the distinction between an eristic debate and a cooperative discussion (pp. 37–39) and that between a personal attack *ad personam* and argumentation *ad hominem* (in an extremely wide meaning of the term) (pp. 110–114).

³⁶ This is not fundamentally altered by the fact that Perelman and Olbrechts-Tyteca’s adherence to relativity stems from a firm belief in democracy and philosophical pluralism and that they certainly care about ethics and moral standards. See Perelman (1979a) and Kluback (1980).

1995). Treatment of the fallacies may not be an important goal in the new rhetoric, but in argumentation theory as a discipline, it certainly is.

Like other argumentation scholars, pragma-dialecticians fully recognize the major contribution Perelman and Olbrechts-Tyteca have made to argumentation theory by introducing the notion of argument(ation) schemes. They have adopted this notion from the beginning (van Eemeren et al. 1978).³⁷ A third point of criticism, however, is that the taxonomy of argument schemes proposed in the new rhetoric has certain weaknesses which makes it hard to maintain (van Eemeren et al. 1996, pp. 121–125). These weaknesses are also acknowledged by Kienpointner (1983, 1992, 1993), who has nevertheless added a number of argument schemes to the collection described in Perelman and Olbrechts-Tyteca (1969). Several other authors have also taken up the new rhetoric's taxonomy or have distinguished similar argument schemes.³⁸

According to van Eemeren et al. (1996), Perelman and Olbrechts-Tyteca's taxonomy of argument schemes suffers from the same weaknesses as does their impressive volume as a whole: Clear definitions are often lacking, the explanations given are not always equally lucid, and the examples sometimes require a careful analysis before they can serve their purpose. New concepts such as quasi-logical argumentation and argumentation based on the structure of reality are explicitly introduced, but others, such as argumentation which structures reality, are not.³⁹

It is not really clear whether the list of argument schemes drawn up by Perelman and Olbrechts-Tyteca is meant to be exhaustive.⁴⁰ It is certain that the classes of argument schemes distinguished in the new rhetoric are not (and are not intended to be) mutually exclusive. In a given case, an argument may, for example, be regarded both as quasi-logical argumentation and as argumentation based on the structure of reality. The same goes for certain subtypes of the various classes, such as, in the class of argumentation creating the structure of reality, an example and an illustration. As a consequence, when applying the taxonomy in analyzing argumentation, it is not always possible for all interpreters to arrive at the same unequivocal interpretation.⁴¹

A more serious problem is that in drawing up the taxonomy, divergent ordering principles have been used: Quasi-logical argumentation is distinguished on the basis of a formal criterion (Does the argumentation display a structural

³⁷ In his short overview of the history of the notion of argument scheme, Garssen (2001) too emphasizes that the term was coined by the new rhetoricians.

³⁸ Efforts to apply the schemes to argument practices have been made by Seibold et al. (1981) and by Farrell (1986).

³⁹ Much of Perelman's later work constitutes an effort to elaborate on the new rhetoric and can be utilized to further its understanding. See, for instance, Perelman (1970, 1982).

⁴⁰ Since Perelman and Olbrechts-Tyteca's compilation of argument schemes is based on their analysis of a somewhat incidental collection of argumentations, a natural consequence of their method is that for their list exhaustiveness cannot be claimed automatically.

⁴¹ The poor definitions of the various categories and the lack of clear examples make it even more difficult to decide what interpretations are legitimate.

correspondence to a valid logical or mathematical argument form?), but argumentation based on the structure of reality and argumentation establishing the structure of reality are both distinguished on the grounds of a content criterion (Does the argumentation flow from a particular view of reality, or does it suggest a particular idea of reality?). In the case of argument schemes distinguished on the basis of a content criterion, one may wonder how far one can still speak of an argument *scheme* in the structural sense. At any rate, the notion of scheme has then been stripped of its formalistic meaning, although the formal connotations remain intact. In such cases, it would be all the more necessary to indicate precisely which sort of cases are to be counted as belonging to each of the various argumentation types and what kind of empirical features they have.

A disadvantage of the use of divergent criteria in drawing up the taxonomy and the fact that its categories are not mutually exclusive is that applying the taxonomy in analyzing argumentative discourse may not lead to unequivocal results, let alone the same interpretation: One interpreter may discern argument schemes in an argumentation which are different from those discerned by another, just like what happens in the case of different audiences. Although Perelman and Olbrechts-Tyteca may regard such complications as natural phenomena, which are true to the way in which argumentation is handled in practice, another disadvantage is that the taxonomy cannot easily be used as a starting point for carrying out empirical research. This creates a real problem, especially in the case of experimental research.⁴² A taxonomy in which the audience plays a decisive role can, for instance, only be implemented in effectiveness research if it is first precisely indicated when, and under which conditions, each particular argument scheme can be an instrumental part of an effective technique of argumentation.⁴³ In theory at least, it can then be determined whether, in a given case, these conditions have been fulfilled. In the new rhetoric, no such specification of conditions is given.⁴⁴

In spite of these problems, Warnick and Kline (1992) have made an effort to carry out empirical research based on Perelman and Olbrechts-Tyteca's taxonomy. After acknowledging some of the criticisms just mentioned,⁴⁵ they set out to clarify and elaborate the argument schemes. They admit that the treatment of the schemes in the new rhetoric "does at times lack clarity" (p. 5) and that in the taxonomy form and content are fused, but, in their opinion, this fusion does not prevent the schemes from being recognizable to various interpreters. They state

⁴² Judged by strict criteria, the new rhetoric does not offer an empirically relevant theory: Any risk of refutation is excluded because the theory does not give rise to any verifiable predictions.

⁴³ Some of the problems mentioned here are, in fact, anticipated by Perelman and Olbrechts-Tyteca, but no feasible solutions are offered to those who do not share their theoretical preconception.

⁴⁴ The criterion cannot simply be "what in a particular case determines the effectiveness (i.e., the persuasive effect)?" since it cannot be known for certain exactly which scheme is responsible for the effect (it is already difficult to determine the effects). Little is solved by summing up all schemes that *may have been* effective in a particular case.

⁴⁵ They respond to van Eemeren et al. (1984).

that most variations can be resolved when they are considered “in the context of the argument situation and in relation to the arguer’s intention.” After reviewing the taxonomy critically, and “constructing a substantial set of identifiable attributes for each scheme” (p. 5), Warnick and Kline (1992) investigated the validity of Perelman and Olbrechts-Tyteca’s argument schemes empirically and found their taxonomy “to be generally complete, since nearly all the arguments could be categorized into at least one of the scheme types” (p. 14). Three individuals could identify the use of 13 schemes coded “with an acceptable level of consistency” (p. 13).

Other points of criticisms of the new rhetoric pertain, for instance, to its truth conception and its treatment of the role of persons in argument. Gross (2000) discusses Johnstone Jr.’s criticisms of the new rhetoric by using the dissociation of concepts as a test case for the robustness of a rhetoric oriented toward truth. Leff (2009) criticizes Perelman and Olbrechts-Tyteca for not giving much consideration to the classical concept of *ethos* in their description of the role of persons in argument. According to Leff, the new rhetoric’s account of the role of persons in argument should be supplemented by reference to case studies. He substantiates this claim by considering the use of “ethotic” arguments in W. E. B. Dubois’s famous essay “Of Mister Booker T. Washington and others.”

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6.1 The Nature of Formal Approaches to Argumentation

The depreciation by Toulmin and by Perelman and Olbrechts-Tyteca of formal approaches to the study of argumentation did not discourage the attempts to further develop such formal approaches and to do so not just to study mathematical arguments but also to study arguments and argumentation in general. In this chapter we shall discuss a number of these attempts. But what are we to understand by a “formal” approach to argumentation? The ways formality is brought in when theorizing about argumentation or when trying to analyze and evaluate arguments are rather diverse, and a borderline between approaches that are formal and those that are not is hard to draw.

It may be said that a formal approach to argumentation consists in the use of formal systems of logic or of dialectic. Still, it needs to be clarified in what this use does consist. Before we start to discuss these matters, we must first briefly elucidate our use of the terms *dialectic* and *formal*, as well as the terms *formal logical system* and *formal dialectical system*.

First, *dialectic*. This term has numerous meanings among philosophers (Hall 1967), ranging from formal logic to the development of society. We want, however, to stick to the core meaning of “conversation” (or “dialogue”) either the practice of conversation or some theory of conversation.¹ As an adjective, *dialectic* or *dialectical* denotes a relationship to such practices or theories. Being argumentative is not a necessary component of a dialectical practice, even though we shall be mainly concerned with conversations in which arguments may indeed be expected to occur. Following Charles Hamblin (1922–1985), we would include as a dialectical system “a dialogue consisting of interchange of statements about the weather”

¹ In this we stay close to Aristotle (see Chap. 2, “Classical Backgrounds” of this volume), who however focused on a special kind of conversation. Care must be taken to ensure that no confusion arises between the meaning of the term *dialectic* in our sense and the deviant understandings of dialectic by philosophers since the eighteenth century. Until the seventeenth century, *dialectica* was (with some interruptions) the usual name for logic. See Scholz (1967, p. 8).

(1970, p. 256). However, there being at least two parties or roles in the conversation is a necessary component of what we mean by dialectic.

Second, *formal*. Again many meanings are attached to the terms *form* and *formal*, so that a logical or a dialectical system can be formal in a number of senses. Three distinct senses of *formal* were pointed out by Barth (Barth and Krabbe 1982, pp. 14–19) and two more by Krabbe (1982b, p. 3). The first sense (*formal₁*, the *Platonic sense*) refers to Platonic forms and need not be considered here. The second sense (*formal₂*, the *linguistic sense*) refers to linguistic forms (shapes): a *formal₂* system would be a system in which the locutions are rigorously determined by grammatical rules and in which further rules are laid down with reference to the logical forms (determined by linguistic shapes) of these locutions. The third sense (*formal₃*, the *regulative sense*) refers to regulations or regimentation.

The fourth sense (*formal₄*, the *a priori sense*) refers to a priori ways of setting up the rules of a system. This sense of formal can be illustrated by Hamblin's distinction (1970, p. 256) between descriptive and formal descriptive dialectic. In descriptive dialectic, rules are examined that operate in actual discussions, like parliamentary debates and legal cross-examinations. The formal (*formal₄*) approach, in contrast, "consists in the setting up of simple systems of precise but not necessarily realistic rules" (ibid.) and studying the properties of such systems. The example provided by Hamblin's central system (1970, pp. 265–270; see our Sect. 6.6) is a good illustration. Clearly the *formal₄* approach needs to be complemented by an empirical approach, which examines the rules and conventions people actually follow when arguing in legal trials, parliamentary debates, and all kinds of familiar situations where dialogues occur.

The fifth sense of formal (*formal₅*, the *logicality sense*) refers to systems that are *purely logical*, i.e., that do not provide for any material rule or move. *Material rules or moves* are those that depend on the meaning of some nonlogical term (Krabbe 1982b, p. 4; Barth and Krabbe 1982, pp. 104–112) and thus depend not only on linguistic form but also on facts or interpretations. *Formal₅* rules or moves do not have this kind of dependency.² Systems of formal logic are usually formal in all these senses, except the first.

Third, what do we mean by a *formal logical* or a *formal dialectical system*? Basically, any system of rules for reasoning that is in some sense formal might be called a formal logical system and any system of rules for conversation a formal dialectical system. However, the way we understand *formal logical* or *formal dialectical system* implies that here formal must be taken at least in the sense of *formal₃*. If a logical or dialectical system is formal only in this sense, it is so in the

² There are many other senses of *formal*. Johnson and Blair (1991, pp. 134–135) distinguish seven senses, four of which do not correspond to any of the five senses listed above: the term *formal* can also be used for "mathematical," for "necessary," for "deductive," and for "algorithmic." The other three senses distinguished by Johnson and Blair correspond to *formal₂*, *formal₃*, and *formal₄*.

weakest sense, but usually formal logical and formal dialectical systems are also formal in some of the other senses (with the exception of formal_1 , the Platonic sense). Theoretically, therefore, there are eight possibilities, which are realized according to whether a given rule-governed (formal_3) logical or dialectical system is defined with reference to linguistic forms (formal_2) or not, is an a priori construction (formal_4) or not, and lacks material rules and moves (formal_5) or not. These three issues are independent of one another, though some combinations are more familiar than others. In most cases we shall mean by a formal system one that is formal, not merely in the regulative sense (formal_3) but also at least in the linguistic sense (formal_2). Most examples we shall put forward in the following sections are even formal in all senses (except formal_1). Material dialectical systems are not formal_5 (and not formal_1), but formal in other respects (formal_2 , formal_3 , and formal_4). The system of 15 rules that constitute the pragma-dialectical discussion procedure (van Eemeren and Grootendorst 2004) is formal_3 and formal_4 but not formal in other respects.

6.1.1 The Use of Formal Systems

Let us consider formal systems that are formal in at least the regulative sense (formal_3) and the linguistic sense (formal_2). In what ways can one – in an approach to the study of argumentation – take advantage of such systems? One kind of use would consist in the application of a formal system in order to achieve an analysis and evaluation of an individual argument or an individual argumentative discussion. An example that comes to mind immediately is the use of a system of logic, such as a syllogistic system or a system of propositional or predicate logic, for the analysis and evaluation (as “valid” or “invalid”) of an argument formulated in natural language. In another kind of use, one would not be directed straightforwardly at the analysis and evaluation of individual cases, but rather be using techniques of formalization in order to contribute to theoretical developments, for instance, by constructing formal systems that provide clarifications of certain theoretical concepts. A third kind would merely consist in using formal systems as a source of inspiration for developments in some other (nonformal) approach to argumentation.

If the formal approach is that of applying systems of formal logic for the analysis and evaluation of individual arguments, argumentation theorists taking this approach will be identifiable with logicians with a special interest in argumentative situations. They may either select a suitable system, which may be standard or deviant (e.g., three-valued or non-monotonic), or develop new ones themselves. To simplify matters, let us suppose that the theorist selects classical propositional logic. Applications of such a system to the analysis and evaluation of elementary arguments would then consist of making a “translation” of each argument into the language of propositional logic and determining its validity by a truth table or some other available method of classical propositional logic (see Sect. 3.2). There are all kinds of objections against such an approach to argumentation: (1) the process of

translation is not straightforward³; (2) if the outcome is negative, that does not mean that the argument is invalid – it could be valid in some other system of logic, e.g., classical predicate logic, or in some other way⁴; (3) the approach misses the crux of the argument by overlooking unexpressed premises (that must be reconstructed) and the argument scheme used; (4) and the approach reduces the evaluation of argumentation to the evaluation of the validity of the reasoning used in the argumentation, neglecting such issues as the appropriateness of premises and the adequacy of the particular mode of arguing in the given context.

The formal approach, thus conceived, cannot be the whole of the story. Nevertheless, the approach can be useful in some cases, given that the problems about translation are not always insuperable, or even very serious, and that a positive result could establish (classical propositional) validity of an argument in a contextually acceptable way. If the argument does not come out as valid in classical propositional logic, the logical analysis will at least yield a survey of distributions of truth-values over elementary sentences that would amount to a counterexample. If, upon inspection, it becomes clear that none of these distributions is realizable, the validity of the argument will have been established after all (be it not in propositional logic); if one of the distributions is realizable, this will give us a counterexample, i.e., a possible situation in which the premises are all true and the conclusion is false, establishing the invalidity of the original argument.⁵ Thus, a formal approach, conceived as the application of systems of logic, can be helpful as an ingredient of a more encompassing approach. We have here spoken only of the semantic investigation of the validity of elementary arguments, but there are more logical techniques that can be integrated into a theory of argumentation. For instance, an analysis using predicate logic can be helpful to unravel a complex argument.⁶ Also, derivational systems of formal logic, such as systems of natural deduction, can be useful for the analysis of hypothetical arguments and *reductio ad absurdum* arguments.⁷

Another kind of formal approach in which formal systems could be applied to individual cases – this time cases of argumentative discussions rather than of arguments – is *formal dialectic*. Systems of formal dialectic allow us not just to formalize arguments but whole discussions, tracking the contributions of each party. As in the case of logical systems, there is indeed a possibility of using these systems directly for the analysis and evaluation of real-life discussions. But then a discussion one wants to analyze and evaluate would need to be translated into

³ See Woods (1995, 2004, Chap. 3).

⁴ According to Massey's *asymmetry thesis*, even if the validity of some arguments can be established by logic in a theoretically legitimate way, this does not hold for invalidity (Oliver 1967; Massey 1975a, b, 1981). For critical replies, see, for instance, Govier (1987, Chap. 9) and Finocchiaro (1996).

⁵ The counterexample will be "situational" in the sense of Sect. 3.3. See also Krabbe (1996), another critical reply to Massey's asymmetry thesis.

⁶ See Krabbe (2012).

⁷ See Sect. 3.3, subsection *Syntactic concepts of validity*. See also Fisher (1988).

the language of the dialectical system and thereupon checked for conformity in its moves with the rulings of the formal dialectical system. Though it could be done at least for fragments of real-life discussions, this is not what the formal dialecticians actually do.

Rather, formal dialectical systems are used in the second of the three ways mentioned above: they contribute to conceptual clarifications and theoretical developments. The plurality of formal dialectical systems does so by giving us a “laboratory of rules” in which we can have thought experiments with various kinds of ruling for different types of dialectical interaction. Concepts such as *Proponent*, *Opponent*, *attack*, *defense*, *commitment*, *fallacy*, *winning*, and *losing* can be studied by constructing formal systems in which they are put to work; the same holds for conceptions of particular fallacies, such as begging the question, many questions, and the fallacies of ambiguity. Of course, logical systems that are not dialectical can also be used in this second way and serve as instruments in “laboratories of logical concepts,” such as *validity*, and *consistency*, in addition to their role as instruments for determining validity or consistency in concrete cases.

The third kind of use mentioned above is exhibited by the development of those approaches and methods that, though not themselves formal or even semiformal, are somehow inspired by formal studies. Examples are the pragma-dialectical approach (Chap. 10, “The Pragma-Dialectical Theory of Argumentation”) and the method of profiles of dialogue (Sect. 6.10), which uses the idea of a formal dialectic without actually defining a formal dialectical system.

Since we are, in this chapter, primarily concerned with formal dialectical systems, our focus will be on the second kind of use.

6.1.2 Contents of This Chapter

The year in which the seminal books by Stephen Toulmin and by Chaïm Perelman and Lucie Olbrechts-Tyteca appeared (1958) was the very same year in which Paul Lorenzen (1915–1994) first proposed in a lecture some rules of dialogical logic. In the paper in which his proposals were reported (Lorenzen 1960) and in further publications about his dialogical logic – which was formal in the linguistic sense (formal₂), the regulative sense (formal₃), and the a priori sense (formal₄), but not, generally, in the logicity sense (formal₅) – Lorenzen brought forward the idea that, instead of being concerned with inferences in one rational mind or with truth in all possible worlds, logic should focus on discussion between two disagreeing parties in the actual world. This very idea helped to bridge the gap between formal logic and theory of argumentation as conceived by Toulmin (1958) and the authors of the *New Rhetoric* (Perelman and Olbrechts-Tyteca 1958, 1969). However, this implication was not immediately evident, because Lorenzen did not at first present his insights as a contribution to the theory of argumentation, but rather as a solution for the problem of defining “constructivity” in mathematics. Later publications – nearly all in German – by Lorenzen and his school (the *Erlangen School*) in

the 1960s made the relevance for the theory of argumentation quite obvious. The Erlangen School will be discussed in [Sect. 6.2](#), some similar proposals by Jaakko Hintikka in [Sect. 6.3](#), and Nicholas Rescher's dialectics, which is situated in a context of inquiry, in [Sect. 6.4](#). The formal dialectical systems of Barth and Krabbe (1982), who fully incorporated the Lorenzen systems into their theory of argumentation, will be discussed in [Sect. 6.5](#).

In the meantime Hamblin (1970) had published his *Fallacies* in which he first introduced the term *formal dialectic*. He was not aware of Lorenzen's approach, but even though there are many differences between the systems proposed by Hamblin and those of the Erlangen School, the latter may still be considered as systems of formal dialectic *avant la lettre*. Hamblin's approach, which was formal (formal₂, formal₃, and formal₄), but not as closely tied to logic as Lorenzen's, had a great impact on those researchers that wanted to combine the potential of formal logic with a dialogical approach directed at a better understanding of – and perhaps the improvement of – common ways of arguing. Prominent in this direction were the papers by John Woods and Douglas Walton (collection of papers: 1989), whose approach is however not restricted to formal dialectic, and many papers by Jim Mackenzie (e.g., Mackenzie 1979a, b, 1984, 1985, 1988, 1989, 1990). Walton and Krabbe (1995) attempted to integrate the Hamblin-type systems and the Lorenzen-type systems. Hamblin's views will be discussed in [Sect. 6.6](#), the Woods-Walton approach in [Sect. 6.7](#), some of Mackenzie's work in [Sect. 6.8](#), and the integrated system of Walton and Krabbe in [Sect. 6.9](#). Finally, we shall in [Sect. 6.10](#) briefly discuss the semiformal method of profiles of dialogues. Further developments of formal dialectic that took place within the field of artificial intelligence (AI) will be discussed in [Chap. 11](#), “Argumentation and Artificial Intelligence”, especially [Sect. 11.6](#).

6.2 The Erlangen School

The most significant of Paul Lorenzen's insights for the development of the study of argumentation were worked out in collaboration with colleagues and students at the University of Erlangen-Nuremberg in Bavaria, Germany. The group around him, including Kuno Lorenz, Wilhelm Kamlah (1905–1976), and Oswald Schwemmer, is therefore sometimes called the *Erlangen School*. Its activities are not confined to logic but extend to ethics and the philosophy of science, mathematics, and the social sciences.

The insights of the Erlangen School regarding argumentation are most clearly expressed in Kamlah and Lorenzen's *Logische Propädeutik oder Vorschule des vernünftigen Redens* [Logical propaedeutic: Pre-school of reasonable discourse] (1967), Lorenzen's *Normative logic and ethics* (1969), his *Lehrbuch der konstruktiven Wissenschaftstheorie* [Textbook of constructive philosophy of science] (1987), and Lorenzen and Schwemmer's *Konstruktive Logik, Ethik und Wissenschaftstheorie* [Constructive logic, ethics, and philosophy of

science] (1973).⁸ *Dialogische Logik* [Dialogical logic] by Lorenzen and Lorenz (1978) is notable as a document of the development of logical theory within the Erlangen School (dialogue logic) because it contains a collection of the authors' earlier publications.⁹

Ever since the appearance of Aristotle's *Prior analytics*, logicians have been chiefly concerned with the formal validity of deductions, pushing the actual activity of arguing in discussions gradually into the background. According to Lorenzen and his associates, this has made logic evolve into a discipline that became increasingly divorced from the practice of argumentation. As a result, logic seemed to have very little or no direct relevance to discussions in colloquial language. The activities of the Erlangen School were calculated to counteract this trend. *Logische Propädeutik* was one of their first contributions in this direction. Containing proposals for standardizing linguistic usage, this book aims to provide "the building blocks and rules for all reasonable discourse" (Kamlah and Lorenzen 1973, p. 13). *Konstruktive Logik, Ethik und Wissenschaftstheorie*, "an elementary school of technical and practical reason" (Lorenzen and Schwemmer 1975, p. 5), and *Lehrbuch der konstruktiven Wissenschaftstheorie* are each intended as a sequel to these preparatory grades in the "pre-school of reasonable discourse."

In his 1958 lecture, referred to in Sect. 6.1, Lorenzen took the first step toward a redialectification of logic as he read his paper *Logik und Agon* [Logic and agon] (published in 1960). This paper, however, was hardly noticed until it was republished in the collection *Dialogische Logik* mentioned above.¹⁰ In *Logik und Agon*, Lorenzen sharply contrasted the agonistic roots of logic that can be found in Plato's Socratic dialogues as well as in Aristotle's early logic (*Topics*, *Sophistical Refutations*) with the solo-minded and monolecical conception of logic in his time:

If one compares this agonistic origin of logic with modern conceptions, according to which logic is the system of rules that, whenever they are applied to some arbitrary true sentences, will lead one to further truths, then it will be but too obvious that the Greek agon has come to be a dull game of solitaire. In the original two-person game only God, secularized: "Nature," who is in possession of all true sentences, would still qualify as an opponent. Facing Him there is the human individual – or perhaps the individual as a representative of humanity – devoted to the game of patience: Starting from sentences that were, so he believes, obtained from God before, or snatched away from Him, and following rules of logic, he is to gain more and more sentences. (Lorenzen and Lorenz 1978, p. 1, our translation)

⁸ A second edition of Kamlah and Lorenzen's *Logische Propädeutik* appeared in 1973 (translated as *Logical propaedeutic: Pre-school of reasonable discourse* (1984)), a second edition of Lorenzen's *Normative logic and ethics* in 1984, and a second edition of Lorenzen and Schwemmer's *Konstruktive Logik, Ethik und Wissenschaftstheorie* in 1975.

⁹ Besides Lorenzen and his student Lorenz (1961, 1968, 1973), many others have contributed to the development of dialogue logic and its applications. For a survey of the history of dialogical logic and a bibliography, see Krabbe (2006).

¹⁰ For a long time, the best-known early paper on dialogical logic was Lorenzen (1961).

In the short paper from which this quote was taken, Lorenzen not only stresses the need for logic to return to a dialectical point of view, i.e., to two-person interaction with dialectical roles, such as Questioner and Answerer or Proponent and Opponent, but also proposes for the first time some formal₂ (formal in the linguistic sense) rules of attack and defense, i.e., rules that are dependent upon the logical form (as shown by the linguistic shape) of the sentence attacked or defended. In his later works he showed how, together with other rules that define a dialogue game, such rules of attack and defense yield a dialogical definition of *logical constants* such as “and,” “or,” “not,” “if . . . then,” “for each,” and “for at least one.” Analogous to the method of *semantic tableaux* introduced by Beth (1955), Lorenzen proposed a method of strategy tableaux, often called *dialogical tableaux*, to determine in what cases a dispute about a particular *thesis* can be won or lost by the Proponent.¹¹

The development of Lorenzen’s insights relating to the dialogical definition of logical constants is of historical significance because these insights signal the initiation of a pragmatic approach to logic. Lorenzen set himself the task of taking the connectives and other logically important non-referring words and defining them by describing the ways in which they are used in a dispute: in a discussion between people who disagree about something. As explained by Barth (1980):

Lorenzen, then, set himself to analyse the intersubjective use of non-referring elements of language (in other words: *the elements that determine the structure*) as they appear in the interaction between a speaker and a *critical* listener – not just a passive or amenable listener prepared to allow himself to be swept along by a *rhetor*, but one who adopts a critical attitude and also expresses this attitude in words. (p. 45; our translation, emphases conforming to the original)

According to Barth (1980), the great significance of the dialogical definition of logical constants achieved in this way is that Lorenzen thereby demonstrates that modern logic is “essentially” pragmatic:

First, he has very explicitly introduced man – the user of language – into logical theory, so that logic – modern logic – appears in a new, pragmatic garb. Second, he has also shown that in that logic man was there already, albeit not clearly visible to one and all [. . .]. (p. 46; our translation)

By showing that logic is pragmatic and by reformulating logic (or logics) in a way that the pragmatic character becomes obvious, Lorenzen has taken a large step

¹¹ The method of semantic tableaux (Beth 1955), which in a different layout became known as truth trees, is explained also in Beth (1970, Chaps. 1, 2, and 3) and further, for instance, in the original layout by Barth and Krabbe (1982, Chap. 10) and in the truth tree layout by Hodges (2001). In a letter of August 17, 1959, Lorenzen wrote (in German) to Beth: “If one defines the way to make use of the logical particles in an obvious way, and if one then writes out the dialogues, then – with unessential transpositions – exactly your tableaux make their appearance” (quoted in Krabbe (2008, p. 48); the date “August 10, 1959” at the bottom of page 48, under a photograph of part of the same letter, is a misprint: it should be “August 17, 1959”). Actually, Beth’s method of deductive tableaux (Beth 1959, 1970) is technically much closer to Lorenzen’s method of dialogical tableaux than his method of semantic tableaux, but Lorenzen may not have known about the former method. For deductive tableaux, see also Barth and Krabbe (1982, Chap. 7).

to bridge the gap between logic and the theory of argumentation that threatened to widen under the influence of the qualms about logic of Toulmin and of Perelman and Olbrechts-Tyteca.

6.2.1 Ortholanguage

In the remainder of this section, we shall discuss and exemplify the project of the Erlangen School of constructing a reformed language for reasonable discourse: a so-called *ortholanguage* (*Orthosprache*, Lorenzen and Schwemmer 1975, p. 24). We shall give only a general and selective outline of their proposals, concentrating chiefly on the standardization of logical constants and the introduction of dialogical rules regarding attacks and defenses. Doing so, we shall focus on some early steps in this construction that were discussed in *Logische Propädeutik*. These early steps illustrate, however, how from an unproblematic part of language one may construct a theory of argumentation, guided by the problems the theory has to solve, and avoiding all arbitrary stipulation.

The basic assumption on which the project of the Erlangen School is built is that what one needs, for the advancement of philosophy and the humanities, is not a plethora of brilliant ideas, but rather a “discipline of thought and speech” that will permit us to get rid of speaking at cross-purposes in interminable monologues and to make a new start in a reasonable dialogue (Kamlah and Lorenzen 1973, p. 11). For this the discussants’ linguistic usage must comply with certain norms and rules. Only when they share a number of fixed postulates with respect to linguistic usage can they conduct a meaningful discussion. The logical propaedeutic and its sequels are aimed at constructing an ortholanguage in order to enable interlocutors to engage in meaningful processes of argumentation and discussion.

The proposed ortholanguage is to be constructed stepwise and systematically, starting from that part of language that is directly connected with – and kept under surveillance of – nonlinguistic practices: the *empragmatic* speech (*empragmatische Rede*, Lorenzen and Schwemmer 1975, p. 22).¹² In order to explain how it is to be so constructed, one may take advantage of such empragmatic speech as language users are already accustomed to. It is not the everyday language that is causing us problems, but the intellectual language (*Bildungssprache*). The ortholanguage is to give us a new and fully understood intellectual language. It must be constructed step by step in such a way that each step will be teachable to its potential users. This is a crucial element of constructivism. It is carried through by starting from empragmatic operations mastered by all language users and used by them all along and by putting forward proposed systematic normalizations for these and other operations.

¹² Also: *empraktische Rede*.

6.2.2 Elementary Statements

The construction of an ortholanguage starts at what Lorenzen and his collaborators regard as the basic units of verbal communication: *elementary statements* (*Elementaraussagen*). From there they arrive at the standardization of *complex* or *compound statements*, in which logical constants play an important role. Elementary statements are indispensable for speaking to other language users, and speakers of all natural languages use them. The statement “William is a dog” is an example of an elementary statement. In it, a so-called *predicator* (*Prädikator*),¹³ “dog,” is attributed to an object identified by the proper name “William.” In the statement “William is not a dog,” by contrast, the predicator “dog” is withheld from the object identified by “William.” This, too, is an elementary statement, just as are the statements “William sniffs at Betsy” and “William does not sniff at Betsy,” in which the predicator “sniff at” is attributed to or withheld from two consecutive objects. An elementary statement, then, is one in which a predicator is attributed to, or withheld from, one or more (consecutive, ordered) objects.

Kamlah and Lorenzen (1973, p. 37) propose the following standardization of the forms of elementary statements¹⁴:

$$(a) \ x_1, x_2, \dots, x_n \varepsilon P \text{ (for } n = 1, 2, 3, \dots)$$

$$(b) \ x_1, x_2, \dots, x_n \varepsilon' P \text{ (for } n = 1, 2, 3, \dots)$$

In this standardized form, x_1, \dots, x_n are variables for proper names, P is a predicator variable, ε is an abbreviation of the Greek word $\varepsilon'\sigma\tau\iota'(\nu)$, which means “is”), and ε' is an abbreviation of its negation (“is not”). Substitution of proper names (or, generally, designators) and predicators for the relevant variables in this statement form, which is not confined to any particular language, produces an elementary statement. Notice that not all sentences express statements, but only those that can be asserted or denied (1973, p. 30). Thus, imperatives and questions may be put into sentences, but they are not statements. An elementary statement, then, is simply a statement by which it is asserted (case *a*) or denied (case *b*) that a particular predicator belongs to a particular object or to particular consecutive objects.

The use of proper names makes elementary statements independent of the particular context of discourse in which they are uttered, a feature that makes them suitable for scientific use. Proper names take the place of *ostensive* (or *deictic*) acts, which are by contrast entirely dependent on context. If one wishes

¹³ Kamlah and Lorenzen (1973, pp. 28–29) use this term rather than *predicate* to avoid confusion with the use of *predicate* in parsing. A predicator is a kind of word that may also occur within a grammatical subject.

¹⁴ Obviously, these notations correspond to the notations $P(x_1, \dots, x_n)$ and $\neg P(x_1, \dots, x_n)$ from predicate logic. But the second type of statement is considered to be complex (not elementary) in predicate logic.

to attribute a particular predicator, for example, “dog,” to an object, one may do so by pointing at the object and saying: “That is a dog.” However, it is also possible to give the object a name, for example, “William,” and then to say: “William is a dog.” Thus, the proper name “William” replaces the demonstrative pronoun “that” and renders the ostensive act superfluous.

It is not feasible in practice (or even possible) to assign a proper name to every single thing to which a predicator can be attributed; neither is it necessary. For this reason, alongside proper names, use is made of *definite descriptions*, which generally consist of a small group of words and which, like proper names, are used to refer to one thing only. Instead of the proper name “William,” for example, one could in circumstances use the definite description “the animal at the lamppost.” It is immediately apparent from this example that replacing a proper name by a definite description may make the language user more dependent on the context of discourse, though it is possible to minimize this dependence.

Obviously, it is of paramount importance for a meaningful discussion that all interlocutors use the predicators occurring in elementary or other statements in the same way. A common method of teaching language users to use predicators correctly is to give examples and counterexamples: “That is a dog,” “That is not a dog, but a cat,” “That is not a dog, but a cow,” and so on. This method, which is extremely common in primary language acquisition, is called *introduction by means of examples* (1973, p. 29).

But not all words can be introduced by means of examples and counterexamples. In particular, this is not possible in the case of so-called *abstractors* (*Abstraktoren*) like “fact,” “concept,” and “set.” According to Kamlah and Lorenzen, abstractors are not predicators (1973, p. 102). We shall not discuss them in greater depth here, but merely observe that such words are often used in radically divergent ways by different discussants. This could happen even in the case of predicators, and therefore it is necessary to achieve a more precise standardization of the use of words in general, in order to eliminate the possibility of talking at cross-purposes. To this end, explicit agreements must be negotiated to guarantee the correct, consistent, and unambiguous use of words.

Predicators and abstractors whose use is regulated by means of explicit agreements are called *terms* (*Termini* 1973, p. 102). The agreements are to fix *predicator rules* indicating that it is legitimate to move from one given elementary statement to another (1973, p. 73). The standardization effected by predicator rules can be illustrated as follows:

$$(a) \ x \varepsilon \text{ dog} \Rightarrow x \varepsilon \text{ mammal}$$

$$(b) \ x \varepsilon \text{ dog} \Rightarrow x \varepsilon' \text{ mollusc}$$

Expressed dialogically, this means that it is established that whoever asserts a substitution instance of “ $x \varepsilon \text{ dog}$,” for example, “William is a dog,” may neither dispute a corresponding substitution instance of “ $x \varepsilon \text{ mammal}$,” for example,

“William is a mammal” (case *a*), nor a given substitution instance of “ $x \varepsilon'$ mollusc,” for example, “William is not a mollusc” (case *b*).

Making use of those terms that are already available, it is possible to introduce new terms by means of *definitions* (1973, pp. 78ff). In the case of a definition, two or more predicator rules are combined in such a way that they can be regarded as introducing an abbreviation. Moreover, these definitional predicator rules are combined into one compound predicator rule that may be read either from left to right or from right to left. To clarify this, let us take another example.

Just now we described terms as predicators or abstractors standardized by means of explicit agreements. The use of the term *term* can now be standardized as follows – the conjunction mark \wedge (“and”) and the disjunction mark \vee (“or”) will be discussed below; the sign \Leftrightarrow shows that the rule can also be read in reverse direction (1973, pp. 79, 102):

$$x \varepsilon \text{ term} \Leftrightarrow (x \varepsilon \text{ predicator} \wedge x \varepsilon \text{ explicitly agreed}) \vee (x \varepsilon \text{ abstractor} \wedge x \varepsilon \text{ explicitly agreed})$$

On this basis, the definition of *term* reads as follows (the sign \equiv indicates that this is a definition):

$$\text{term} \equiv \text{explicitly agreed predicator} \vee \text{explicitly agreed abstractor}$$

By explicit agreements on usage, such as the formulation of predicator rules, and the introduction of new terms by means of definitions, a standardization of the use of words is to be effected. This will bring about that those language users who are acquainted with the standardization and adhere to it will use the words occurring in their discussions correctly, consistently, and unambiguously. The first and most fundamental condition for the success of a discussion has thus been fulfilled.

Another condition, however, is that the interlocutors can agree as to the manner in which the *truth* of elementary statements can be established: the interlocutors must ensure that they reach agreement as to whether a predicator, which is clear enough by itself, is or is not *rightly* attributed to, or withheld from, a particular object. In order to establish the truth-value of an elementary statement, it must be checked whether the predicator does or does not belong to the object.

This check, however, cannot be entrusted to just any language user: it must be carried out by those language users that are both *competent* and *reasonable* judges (1973, p. 119). *Competent* here means that the language users concerned are able to carry out the relevant check in a correct manner. *Reasonable* means that they will display an open attitude both toward their interlocutors and toward the objects discussed and will not allow themselves to be guided by mere emotions or mere traditions and habits. Kamlah and Lorenzen (1973) summarize their verification procedure as follows:

If every other person who shares my language, and who is both competent and reasonable, would, after suitable checks, attribute the predicator “*P*” (or a synonymous predicator) to an object, then I too am entitled to say, “This is *P*” (in that case the predicator “*P*” belongs to that object). If this condition is fulfilled, then I may say further: “The statement ‘this is *P*’ is

true” (in that case the predicator “true” belongs to that statement), or alternatively: “The assertion ‘this is *P*’ is justified.” (pp. 119–120; our translation)

When competent language users have carried out the proper check in the appropriate manner and this check has led to a unanimously positive judgment, one is justified in describing the elementary statement as *true*. This does not mean, however, that an elementary statement with which, at a particular moment, no one happens to agree could not be true. The absence of agreement may, after all, be the result of a lack of necessary facilities for carrying out the required checks. Thus, an (elementary) statement may be perfectly true even though there is nobody, or not yet anybody, prepared to confirm it. Of course, it *is* true only if someone in a position to carry out the proper checks in the correct manner would, if he actually did carry them out, be obliged to endorse it (p. 124).

Kamlah and Lorenzen (1973) call this verification procedure, which depends on the carrying out of suitable checks by competent language users, the *interpersonal verification* of statements. They regard it as a general framework within which verification of elementary statements ought to take place (pp. 121, 125). The particular methods and techniques used in the checks may vary considerably from case to case, and they may change radically during the course of time. Interpersonal verification is thus not itself a method of determining the truth-value of elementary statements, but a universal and constant procedural principle, serving as a general guideline.

6.2.3 Complex Statements

Interpersonal verification is concerned exclusively with elementary statements. Complex (or compound) statements, however, can also be put forward, attacked, and defended in a discussion; indeed, generally speaking, they are more common. The truth-value of such statements can only be established after an analysis has determined the manner in which they are composed of elementary statements: complex statements must first be decomposed (Kamlah and Lorenzen 1973, pp. 124–125). This requires an understanding of the principles that play a part in their composition.

Complex statements are constructed from elementary statements by means of logical constants (which Kamlah and Lorenzen call logical particles [*logische Partikeln*]): connectives (*Junktoren*) and quantifiers (*Quantoren*). Establishing the truth-value of complex statements, therefore, demands a standardization of the use of logical constants. To this end, Kamlah and Lorenzen use the method that we saw was introduced by Lorenzen in 1958. They introduce the logical constants dialogically, an approach quite different from that of a definition using truth-values, which is the customary procedure in the semantics of classical propositional logic. In order to effect a dialogical introduction of logical constants, Kamlah and Lorenzen formulate rules for the use of these particles in a dialogue.

The dialogical method makes full use of the fact that human speech is chiefly directed toward a listener or listeners. If the listener reacts, then a dialogue has been initiated. Statements are not posited as true or false “just like that”: they are asserted or disputed in front of an interlocutor who may act as an *Opponent* or as a *Proponent* of them (1973, pp. 158–159). A dialogical definition of logical constants (connectives and quantifiers), therefore, is to provide an indication of what course the dialogue must take to justify or refute the statements constructed by means of these particles.

We shall discuss briefly how logical constants are defined in the *Logische Propädeutik* (1973, pp. 159–162). We first list English versions of these particles as well as their symbolic notations¹⁵:

1. “And” – a conjunctive connective by which one constructs a conjunctive statement (or conjunction), notation: \wedge
2. “Or” – a disjunctive connective by which one constructs a disjunctive statement (or disjunction) (in Kamlah and Lorenzen’s terminology: *Adjunktion*), notation: \vee
3. “If . . . then” – a conditional connective by which one constructs a conditional (statement) (in Kamlah and Lorenzen’s terminology: *Subjunktion*), notation: \rightarrow
4. “Not” – a negating “connective” by which one constructs a negative statement (or negation), notation: \neg
5. “For each” – a universal quantifier by which one constructs a universal statement, notation: \forall
6. “For at least one” – an existential quantifier by which one constructs an existential statement, notation: \exists

6.2.4 Conjunction (\wedge)

Let A and B be statements. Suppose a speaker acts as the Proponent of the thesis $A \wedge B$, that is, he asserts the conjunction $A \wedge B$.¹⁶ Another speaker, who acts as the Opponent of this thesis, is then entitled to choose either of the two component statements and cast doubt on its veracity. If the Proponent is unable to defend this statement, then the Opponent wins, and this outcome is definitive. If, however, the Proponent parries the attack by a successful defense of the attacked component statement, then he wins, but not definitively, since the Opponent is still entitled to undertake a second attack. If in the first round the Opponent unsuccessfully attacked (say) A , she may now attack B . If the second attack succeeds, then the Opponent wins (definitively), and if the Proponent succeeds in parrying this second attack too, by successfully defending the attacked statement B , then *he* wins, this time definitively.¹⁷

¹⁵ Some of these notations were introduced in Sect. 3.3 of this volume.

¹⁶ We shall use “he” to refer to the Proponent and “she” to refer to the Opponent.

¹⁷ These “rounds” (*Dialoggänge*) correspond to Barth and Krabbe’s *chains of arguments* (1982); see Sect. 6.5 below on “thoroughgoing dialectics.”

6.2.5 Disjunction (\vee)

Suppose a speaker acts as the Proponent of the thesis $A \vee B$, that is, he asserts the disjunction $A \vee B$. The Opponent of this thesis is then entitled to attack the complex statement by casting doubt on all of it at once. The Proponent may now choose one of the two component statements and attempt to defend it. If he succeeds, he wins, and in this case he at once wins definitively. If his defense fails, he loses, but at this stage he does not lose definitively, since he can still substantiate his statement in a second round of defense, if he produces a successful defense of the other component statement. If this second defense is undertaken and succeeds, the Proponent wins after all, and then the outcome is definitive; if the second defense fails as well, the Proponent loses definitively.

The symbolic notations \wedge and \vee reflect the fact that in several respects conjunction and disjunction are dialogical mirror images of each other. In the case of a conjunction, the choice of the component statement to be defended is up to the Opponent; in the case of a disjunction, it is up to the Proponent. In the case of a conjunction, the Proponent needs two rounds to reach a definitive victory while he has to lose only one round in order to lose definitively; in the case of a disjunction, the converse is true: now the Opponent needs two rounds for a definitive win, and the loss of only one round is enough to bring about the Opponent's definitive defeat.

6.2.6 Conditional (\rightarrow)

Suppose a speaker acts as the Proponent of the thesis $A \rightarrow B$, that is, he asserts the conditional $A \rightarrow B$. The Opponent of this thesis is then entitled to attack this statement by casting doubt on all of it at once. If she does so, she is herself obliged to assert A . The Proponent of the thesis $A \rightarrow B$ is now in turn entitled to attack A , and the Opponent is then obliged to defend A . If the Proponent does indeed cast doubt on A and the Opponent fails to defend A successfully, then the Proponent wins the entire dialogue, and the outcome is at once definitive. If, on the other hand, the Opponent succeeds in his defense of A , then the Proponent must go on to assert and defend B . If this defense succeeds, the Proponent wins definitively, but if it fails, he loses, and definitively so.

Thus, in the case of a conditional, too, the dialogue may, according to Kamlah and Lorenzen, consist of two rounds.¹⁸ However, in the case of conjunctions and disjunctions, one of the two parties always has to persist through two rounds of the

¹⁸ This time, however, the rounds do not correspond to chains of arguments in Barth and Krabbe's sense (except in the *strictly constructive dialogue game*, introduced below). The reason is that when a chain of arguments is succeeded by another one, all moves belonging to the first chain and not to the second must be retracted. For instance, if the Proponent has to defend a conjunction, all statements made by the Opponent in the first round (chain of arguments) are canceled when the second round (chain of arguments) starts. In the case of the conditional, however, no such retractions or cancellations take place: both "rounds" here belong to the same chain of arguments (except in the *strictly constructive dialogue game*). At the time *Logische Propädeutik* was written, investigations into the rules for conditionals were still going on.

same kind in order to win: in the case of a conjunction, the Proponent has to defend twice in order to achieve definitive victory, and in the case of a disjunction, the Opponent has to persist through two rounds of the Proponent's defense in order to achieve definitive victory. If in the case of a conditional the dialogue runs to two rounds, then the parties have to put up a defense in only one round each: in the first round the Opponent defends a statement (A) and in the second the Proponent defends a statement (B). In both rounds the Proponent has a chance of definitive victory, whereas the Opponent can achieve definitive victory only in the second round.

6.2.7 Negation (\neg)

Suppose a speaker acts as the Proponent of the thesis $\neg A$, that is, he asserts the negation $\neg A$. To attack the assertion $\neg A$, the Opponent is to contradict the Proponent and assert A . If the Opponent subsequently succeeds to defend A , then she obtains a definitive victory. If, on the other hand, the Opponent is unable to defend A successfully, then she loses and the Proponent of the thesis $\neg A$ wins definitively.

6.2.8 Universal Statement (\forall)

The universal statement that each individual in a given domain is a dog can be rendered thus: starting from the elementary statement "William ε dog," replace the name William by an individual variable (dummy name), say " x ," getting " $x \varepsilon$ dog." The result will not be a statement, since " x " does not refer to any particular individual of which the statement would say that it was a dog. However, if we put a universal quantifier with the same individual variable in front, we get the universal statement " $\forall x \, x \varepsilon$ dog" which is short for "For each individual, x , in the given domain, x is a dog," or "Each individual in the given domain is a dog." Here we have constructed a universal statement from an elementary statement, but the same technique can be used to construct universal statements ($\forall x A(x)$) from statements of any degree of complexity ($A(a)$) in which a proper name, a , occurs at one or more places: replace the proper name a by an individual variable not occurring in $A(a)$ and put a universal quantifier with the same variable in front.

Let P be some predicate, and suppose that a speaker acts as the Proponent of $\forall x \, x \varepsilon P$, that is, he asserts the universal statement $\forall x \, x \varepsilon P$. The Opponent is then entitled to attack this universal statement by casting doubt on a particular case that is covered by it. Suppose she does so by selecting a particular individual a from the domain associated with the variable x . The Proponent is then held to asserting and defending the elementary statement $a \varepsilon P$. If the Proponent is unable to defend this statement, then the Opponent wins, and this outcome is definitive. If, however, the Proponent succeeds, then he wins, but (in most cases¹⁹) not definitively, since the

¹⁹ That is, unless all the individuals in the domain have already been tried in previous rounds.

Fig. 6.1 Rules for the use of logical constants

	Assertion	Attack	Defence
Conjunction	$A \wedge B$	$L(left)?$	A
		$R(right)?$	B
Disjunction	$A \vee B$	$?$	A
			B
Conditional	$A \rightarrow B$	$A?$	B
Negation	$\neg A$	$A?$	(none)
Universal statement	$\forall x A(x)$	$a?$	$A(a)$
Existential statement	$\exists x A(x)$	$?$	$A(a)$

Opponent is still entitled to select some other individual. The same stipulations hold if the speaker asserts a more complex universal statement ($\forall x A(x)$).

6.2.9 Existential Statement (\exists)

Suppose that a speaker acts as the Proponent of $\exists x x \varepsilon P$, that is, he asserts the existential statement $\exists x x \varepsilon P$. The Opponent is then entitled to attack this statement by simply casting doubt on it. Now it is the Proponent who is entitled to select an individual a from the domain. He must then assert and defend $a \varepsilon P$. If the Proponent succeeds, then he wins, and this outcome is definitive. If, however, the Proponent is unable to defend this statement, then the Opponent wins, but (in most cases) not definitively, since the Proponent is still entitled to select some other individual.²⁰ The same stipulations hold if the speaker asserts a more complex existential statement ($\exists x A(x)$).

6.2.10 Dialogue Rules

On the strength of these definitions Kamlah and Lorenzen (1973, pp. 210, 223) formulate the rules for the use of some logical constants, which we list in Fig. 6.1. Since these rules lay down the right to assert or dispute a particular statement in a dialogue in a particular manner, they may be regarded as a dialogical definition of these logical constants. Note that a question mark indicates an attack, that “ x ” can be replaced by any other individual variable, and that “ a ” can be replaced by any *individual constant* naming an individual in the domain.

In Fig. 6.1, the first column shows the assertion (statement) being discussed, whereas the second column shows the ways in which the Opponent may attack this assertion. It is shown by a horizontal line that there is a choice to be made by the Opponent in case this assertion is a conjunction. The third column shows the

²⁰ For this last case, Kamlah and Lorenzen do not tell us whether the Opponent wins definitively (1973, p. 162), but it seems obvious that, unless all individuals have already been considered, other rounds can still be opened.

formula the Proponent is to assert and defend (upon attack) in order to defend his original assertion in the first column against the attack in the second column. Here a horizontal line shows that there is a choice to be made by the Proponent in case this assertion is a disjunction.

The possibilities of attack and defense rendered in Fig. 6.1 can be summarized as follows: if the Proponent in a dialogue asserts a conjunction $A \wedge B$, the Opponent can choose between two possible lines of attack: $L?$ and $R?$. If she chooses $L?$, the Proponent can defend only by asserting A , which assertion the Opponent can then attack, and so on. Analogously, if the Opponent chooses $R?$. If the Proponent asserts a disjunction $A \vee B$ that is attacked by the Opponent, the latter has not to make a choice, but the Proponent has a choice between two possible lines of defense: he may assert either A or B . Once a conditional $A \rightarrow B$ has been attacked, so that the Opponent has asserted A , the Proponent may either offer a defense consisting of the assertion of B or opt for a counterattack on A . And whenever the attacked statement is a negation $\neg A$, so that again the Opponent has asserted A , the Proponent has no direct line of defense against this attack. In that case, he has no alternative but to carry out a counterattack on A .²¹ If the Proponent asserts a universal statement $\forall x A(x)$, the Opponent selects for her line of attack an individual a , and the Proponent can defend only by using $A(a)$. Finally, if the Proponent asserts an existential statement $\exists x A(x)$ that is attacked by the Opponent, the latter has not to make a choice, but the Proponent selects for his line of defense an individual a and defends by asserting $A(a)$.

The rules for using these logical constants have a decomposing effect.²² Inspection of the rules shows that every statement that occurs in some attacking or defending move must have occurred as a proper syntactic constituent of an earlier assertion or at least must be a substitution instance (some variables being replaced by individual constants) of such a constituent. Consequently, provided that some further ruling of the dialogues duly limits the allowed number of attacks on any statement (and of defenses against these attacks), a dialogue starting from a statement composed by means of logical constants will always, after a finite number of moves, lead to the assertion and defense by either party of some elementary statement (unless the dialogue will have ended before). Hence, in order to determine who has finally won a certain dialogue, the interlocutors must (generally) know about some elementary statement whether or not it has been successfully defended.

Moreover, it is necessary to have more detailed rules for the conduct of dialogues – and not only to restrict the number of attacks on, and defenses of, one and the same statement. Rules are needed to indicate which statements may be attacked at any particular moment, and which may be defended, and whose turn it is

²¹ In the constructive and classical dialogue games defined below (but not in the strictly constructive game), there may be some other statement than A that could serve as the object of the Proponent's counterattack.

²² This is a feature they share with the rules for semantic tableaux.

to move. Kamlah and Lorenzen (1973) distinguish three different sets of rules (which we shall present below) and hence introduce three different dialogue games. The only difference lies in the so-called general dialogue rule as applied to the Proponent, which can be either strictly constructive (*streng-konstruktiv*), or constructive, or classical (pp. 213–215, our paraphrase).²³

Starting rule

The Proponent starts by asserting a thesis; the partners in the dialogue take turns to move.

General dialogue rule for the strictly constructive dialogue game

Each discussant attacks the statement made by the other in the preceding move or defends himself against the attack by the other in the preceding move.

General dialogue rule for the constructive dialogue game

The Proponent attacks one of the statements put forward by the Opponent or defends himself against the Opponent's most recent attack; the Opponent attacks the statement made by the Proponent in the preceding move or defends herself against the Proponent's attack in the preceding move.

General dialogue rule for the classical dialogue game

The Proponent attacks one of the statements put forward by the Opponent or defends himself against one attack by the Opponent; the Opponent attacks the statement made by the Proponent in the preceding move or defends herself against the Proponent's attack in the preceding move.²⁴

Winning rule

The Proponent wins if he successfully defends an attacked elementary statement or if the Opponent fails to defend an attacked elementary statement.²⁵

6.2.11 An Example

By way of example, we present in Fig. 6.2 a strictly constructive dialogue. It is supposed that " $B(a)$ " stands for an elementary statement. The Proponent wins exactly when he manages to defend that statement.

In Fig. 6.2, the Proponent first asserts a thesis (1). Since this thesis is a conjunction, the Opponent can choose whether to continue with its right part or its left part. Here she chooses the left part (2). The Proponent can defend only by asserting this left part (3). Since (3) is a negation, O can attack it, but she then has to

²³ The Erlangen School generally prefers the constructive games. In a situation where, for each elementary statement that might occur in the dialogue, it is publicly accessible whether and how it can be defended (whether it is true), the choice between these dialogue games makes no difference for the possibilities of winning or losing (Kamlah & Lorenz 1973, p. 216; Krabbe 1978).

²⁴ Obviously, the general dialogue rule (in either version) may block the occurrence of several rounds pertaining to one and the same assertion, for instance, two attacks, by the Opponent, on " $A \wedge B$." This is only to say that a *definitive* loss or win may need more than one dialogue, where a *dialogue* would coincide with what earlier was called a *round*.

²⁵ Again, this rule must be taken as referring to dialogues in the sense of rounds.

Fig. 6.2 A strictly constructive dialogue

Moves by the Opponent		Moves by the Proponent	
		1	$\neg\forall x(\neg A(x)\vee\neg\exists yB(y))\wedge A(a)$ (the thesis)
2	$L?$	3	$\neg\forall x(\neg A(x)\vee\neg\exists yB(y))$
4	$\forall x(\neg A(x)\vee\neg\exists yB(y))?$	5	$a?$
6	$\neg A(a)\vee\neg\exists yB(y)$	7	$?$
8	$\neg\exists yB(y)$	9	$\exists yB(y)?$
10	$?$	11	$B(a)$
12	$?$ (attacking 11)		

assert the negated statement (4). Because the Proponent has no direct line of defense against an attack on a negation, he must now attack (4). Since (4) is a universal statement, the Proponent is to select an individual a (5). The Opponent can only defend herself against this counterattack by asserting the statement (6) in which whatever she universally asserts in (4) is now said of a as a special case (this statement is found by dropping the universal quantifier of (4) and substituting a for x). Since (6) is a disjunction, the Proponent's attack on it (7) gives the Opponent a choice: she can defend either by asserting the left part or by asserting the right part of the disjunction. Here she chooses the right part (8). Since (8) is a negation, the Proponent can attack it, but he then has to assert the negated statement (9). Since (9) is an existential statement, the Opponent's attack on it (10) leaves it to the Proponent to select an individual. The Proponent defends by selecting a and asserting the statement (11) in which whatever he asserted to be the case for at least one individual in (9) is now said to be the case for a . Since we assumed (11) to be an elementary statement, the Proponent can, upon the Opponent's attack (12), no longer use the rules for logical constants for its defense, which if possible must proceed by predator rules and interpersonal verification.

6.2.12 Logical Truth

The dialogue games considered thus far are all *material dialogue games* (Kamlah and Lorenzen 1973, p. 221). That is to say, the elementary statements are meaningful statements, and their meaning is decisive on whether they can be successfully defended and hence on whether the Proponent will be able to gain an ultimate victory. It is well known, however, that sometimes the truth or falsity of a compound statement can be established without any need to bother about the truth-values of the component elementary statements. This is, in classical logic, the case with logical truths (*tautologies*) and logical falsities (*contradictions*), since their truth or falsity is not dependent on the contents of the component statements, but on the *statement form* of which such a compound statement is a substitution instance.

Similarly, some compound statements can be defended in a dialogue, no matter whether their elementary components can be successfully defended. It suffices to make sure that each elementary statement that the Proponent (of the original compound statement) needs to present as a defense has been defended earlier by

the Opponent. In that case, the Proponent can simply copy the defense given by the Opponent. Let, for instance, A be an elementary statement and let the Proponent assert the compound statement $A \rightarrow A$ as his thesis. Then the Opponent attacks the thesis, but doing so must assert A . If the Proponent now attacks A , the Opponent will be the first one having to present a defense of A . If she fails, the Proponent wins definitively. If she succeeds, there is to be a second round. But in this round the Proponent has to present a defense of A , and all the Proponent needs to do to assure a definitive gain is to copy the successful defense presented by the Opponent in the preceding round. According to Kamlah and Lorenzen, a statement is to be called (*constructively*) *logically true*, if and only if (in the constructive dialogue game) the Proponent can guarantee that, ultimately, he will have to defend only some elementary statement that has been asserted by the Opponent at some earlier stage (p. 220).

Constructive logical truth (and constructive logical falsity) can be established in dialogues in which statement forms (*formulas*) take the place of statements. This gives rise to a formal₅ (formal in the logicality sense) dialogue. To make formal₅ dialogue possible, one has to change the general dialogue rule and to stipulate that the Proponent is prohibited, when defending a formula, from attacking any elementary formulas; the Opponent, however, may attack elementary formulas, but then the Proponent has no defense. The winning rule must also be modified. So the new rules of the formal (constructive) dialogue game are as follows (1973, p. 221, our translations):

General dialogue rule of constructive formal dialogue games

1. The Proponent may only either attack one of the compound formulas put forward by the Opponent, or defend himself against the Opponent's last attack.
2. The Opponent may only either attack the statement made by the Proponent in the preceding move, or defend himself against the Proponent's attack in the preceding move.

Winning rule of constructive formal dialogue games

The Proponent wins if he has to defend an elementary formula after the Opponent's bringing forward of an identical elementary formula.

6.2.13 What Has Been Achieved and What Remains to Be Done

The various sets of rules for dialogue (including those for the use of logical constants) proposed by Kamlah and Lorenzen constitute attempts at a normative standardization of argumentative linguistic usage. The rules jointly determine how a dialogue between the Proponent and the Opponent of a thesis ought to progress.

Before the dialogue proper starts, the Opponent may advance certain *hypotheses*, but the Proponent then has the right to hold the Opponent to these and may make

use of this right by attacking the hypotheses in his defense of his thesis. In that case the Opponent's hypotheses effectively function as the premises of an argument whose conclusion appears in the dialogue as the Proponent's thesis (Kamlah and Lorenzen 1973, p. 223).

As may be seen from the rules, each interlocutor's contribution must always be a reaction to some earlier move by his adversary (except for the very first move, of course). The Proponent formulates the thesis, after which the Opponent attacks it, possibly but not necessarily starting from certain hypotheses. The Proponent defends himself against the attacks of the Opponent and in so doing may make use of the Opponent's hypotheses. The Opponent consistently attacks all statements advanced by the Proponent in defense of his thesis. The rules of the game determine not only whose turn it is but also what moves are legitimate and when some discussant has won the dialogue – and who the winner is.²⁶

Logische Propädeutik makes an early contribution to designing an adequate apparatus that is to enable joint deliberation on the truth of statements. The rules proposed are eligible for interlocutors who have jointly set themselves the target of using verbal means in a dialogue to resolve a dispute about an opinion. All along, it has been tacitly assumed that the interlocutors agree on the purpose of the discussion. In practice, however, this is quite often not the case. A more encompassing theory of argumentation must, therefore, provide not only the technical means to conduct discussions in a context of agreement on objectives and norms for discussion but also means to discuss these very objectives.

In this connection, it is relevant to point to the books mentioned as sequels to *Logische Propädeutik*. Kamlah and Lorenzen (1973, p. 231) regard their logical propaedeutic as a “preparatory course” in logic (*logische Vorschule*) leading to a “practical main course” (*praktische Hauptschule*). The practical complement of the logical propaedeutic is provided with a basis in Lorenzen and Schwemmer's *Konstruktive Logik, Ethik und Wissenschaftstheorie* (1973, 1975).

Practical knowledge is needed to eliminate possible sources of conflict and to constructively resolve existing conflict situations relating to purposes and norms. Lorenzen and Schwemmer regard it as the task of ethics to lay down principles of conflict resolution, to the extent that a resolution can be achieved by verbal means and in a teachable fashion. Ethics, they believe, should study the principles of arguing for or against particular objectives (1975, pp. 150–152).

²⁶ Therefore, dialogue games are games in the sense of mathematical game theory. The same holds for Barth and Krabbe's systems of formal dialectics (Sect. 6.5). Lorenzen's dialogical tableaux, mentioned above, search for winning strategies in the sense of game theory. Generally, a dialogical tableau consists of several dialogues (rounds, chains of arguments) starting from the same initial situation.

6.3 Hintikka's Systems

Two kinds of system proposed by Jaakko Hintikka are of interest in the present context. First we shall have a look at Hintikka's games of seeking and finding (1968, 1973), which were introduced to explain the meaning of quantifiers and which greatly resemble the dialogue games introduced by Paul Lorenzen. Next we shall discuss one of his proposals for a model of information-seeking dialogues (Hintikka 1981), a model that in spite of its name models a kind of argumentative exchange.

6.3.1 Games of Seeking and Finding

The similarity between Hintikka's games of seeking and finding and Kamlah and Lorenzen's rules for the use of logical constants, which were discussed in the preceding section, remains somewhat hidden by differences in conceptualization and technicalities. For instance, Hintikka does not talk about attacks and defenses, and therefore his games of seeking and finding appear more distanced from an argumentative situation. Also, the roles in the game are not designated as Proponent and Opponent, but as *Myself* and *Nature*, which suggests a situation of inquiry rather than argument.²⁷ It is supposed that, in the background, there is a domain of individuals, D , as well as an interpretation with respect to D of the formulas used in the dialogues. Thus, these formulas function as statements, having a meaning and a truth-value. Truth-values are decisive for winning or losing a game about an elementary formula. Hence, the dialogues using these interpreted formulas are material games (as were most of Lorenzen's games). The game starts with a formula F , to be defended by *Myself*. F is a formula belonging to the language of (first-order) predicate logic with the logical constants that appear in the rules below (hence without conditionals). The logical form of the formula decides who is to make a move, *Myself* or *Nature*. At each stage of the game, there is exactly one formula, G , that is being discussed. As long as some complex formula is being discussed, each move will replace the formula discussed at that move by (a substitution instance of) one of its proper constituents: the formula to be discussed at the next stage, as will be apparent from the rules. Below we shall quote Hintikka's rules, adapting the notation in order to facilitate the comparison with the rules in Fig. 6.1:

- (G.∃) If G is of the form $\exists xA(x)$, I choose a member of D , give it a name, say ' a ' (if it did not have one before). The game is continued with respect to $A(a)$. [...]
 (G.∀) If G is of the form $\forall xA(x)$, Nature likewise chooses a member of D .

²⁷ Hintikka introduces "myself" (uncapitalized) and "Nature" as colloquial names for the game's players (1973, p. 100), but in view of the role switches in the game, it is more convenient to conceive of them as roles.

Formula discussed	Next move to be made by
$\neg\forall x(\neg A(x)\vee\neg\exists yB(y))\wedge A(a)$	Nature (= Bob)
$\neg\forall x(\neg A(x)\vee\neg\exists yB(y))$	(exchange of roles)
$\forall x(\neg A(x)\vee\neg\exists yB(y))$	Nature (= Wilma)
$\neg A(a)\vee\neg\exists yB(y)$	Myself (= Bob)
$\neg\exists yB(y)$	(exchange of roles)
$\exists yB(y)$	Myself (= Wilma)
$B(a)$	(If $B(a)$ is true Wilma wins, otherwise Bob wins.)

Fig. 6.3 Playing the language game of seeking and finding

(G. \vee) If G is of the form $(A \vee B)$, I choose A or B , and the game is continued with respect to it.

(G. \wedge) If G is of the form $(A \wedge B)$, Nature likewise chooses A or B .

(G. \neg) If G is of the form $\neg A$, the game is continued with respect to A with the roles of the two players interchanged. (Hintikka 1973, pp. 100–101)

When the roles of the two players are interchanged (Rule G. \neg), that means that the player who had assumed the role of Myself (and had, for instance, to choose a part of a disjunction if a disjunction had to be discussed (Rule G. \vee)) will now assume the role of Nature (and be the one who chooses a part of a conjunction if a conjunction is to be discussed next (Rule G. \wedge)), whereas the player who had assumed the role of Nature now assumes the role of Myself. The game ends as soon as an elementary formula has been reached. If this formula is true (on the basis of the domain D and the given interpretation), the player acting as Myself wins and the one acting as Nature loses; if it is false, it will be the other way round.

To see how much this game resembles those of the Erlangen School, especially the strictly constructive material game, we shall present, in Fig. 6.3, a tournament between Myself and Nature about the same formula as was used in Fig. 6.2. It is again supposed that “ $B(a)$ ” stands for an elementary statement. Let the players be Wilma and Bob. At the start Wilma assumes the role of Myself and Bob the role of Nature.

In Fig. 6.3, the initial formula is a conjunction. Therefore, rule (G. \wedge) applies and Nature (= Bob) makes a move. Bob chooses the left part of the conjunction. Since this formula is a negation, (G. \neg) applies, so Bob and Wilma swap their roles. The game continues with the negated formula. Since this is a universal statement, (G. \forall) applies and Nature (now Wilma) is to select and name an individual (a member of D), say a . The game continues with the formula that claims for a whatever the universal formula claims for each individual. Since this formula is a disjunction, (G. \vee) applies and Myself (= Bob) makes a move. Bob chooses the right part of the disjunction. Since this a negation, Bob and Wilma once more swap their roles. The game continues with the negated formula. Since this is an existential formula, (G. \exists) applies and Myself (= Wilma) is to select and name an individual, say a . The game continues with the formula that claims for a whatever the existential formula claims

to be the case for at least one individual. Since this formula was supposed to be elementary, the game stops here.

It can be shown that Hintikka's language game of seeking and finding and Kamlah and Lorenzen's strictly constructive material game described in the preceding section are equivalent in the following sense: supposing that both games assign the same truth-values to elementary formulas (which, as we saw, function as statements) and that exactly the true ones can be defended in the strictly constructive material game, then there is in Hintikka's game starting with a formula F a winning strategy for the player who initially assumes the role of Myself exactly when in Kamlah and Lorenzen's game starting with F as its thesis there is a winning strategy for the Proponent.²⁸

But even though these two games are very similar and in a sense equivalent, they are not equally suited as models of argumentation. We saw that the games of the Erlangen School straightforwardly start from the situation where one party (the Opponent) casts doubt on the assertion of the other (the Proponent) and connects this situation with argumentative moves of criticism and defense. It is much harder to tell what Hintikka's language games of seeking and finding tell us about argumentation: In what sense precisely would one argue against Nature? Hintikka's games are primarily intended as a game-theoretical approach to semantics, providing insight into activities that yield the meaning of quantifiers and generally into "those activities that serve to connect, in some idealized but precise sense, certain parts of our language with the world" (Hintikka 1973, p. 99).²⁹ The argumentative interpretation of the game is better visible in its Erlangen counterpart.

6.3.2 Information-Seeking Dialogues

Let us now turn to Hintikka's (1981) model for information-seeking dialogues. As said above, the model actually deals with argumentative dialogues and is therefore much more relevant for argumentation theory than one might suppose. According to Hintikka, his model is to give us "a rational reconstruction of the dialectical method in terms of modern logic" (p. 212), taking a cue from Plato's Socratic dialogues. The logical method used in the model is the (semantic) tableau method introduced by Beth (1955). But this method is supplemented by applications of the

²⁸ For more details, see Krabbe (2006, p. 688). Actually, the equivalence also holds for the constructive and classical games (see Note 23). For a more general approach to material systems with elementary statements that are either true or false and their connection with the semantic conception of truth (model theory), see Krabbe (1978).

²⁹ For more on game-theoretical semantics and its applications, see the following two collections of papers: Saarinen (Ed., 1979) and Hintikka and Kulas (1983), as well as Carlson (1983), who presents a related approach to discourse analysis.

theory of questions and answers.³⁰ We shall here give a brief nontechnical sketch of the model.³¹

There are two players, called " α " and " β ". Initially, α puts forward the assertion (thesis) A_0 and β puts forward the assertion (thesis) B_0 . In the course of the game, each player may put forward additional assertions. The aim of each player is to show his assertions to be logical consequences of premises provided by the other. Initially the assertion of the other party counts as the only premise that one can use for this purpose. Later on, one may use any additional assertion of the other as a premise. The method used to show that one's assertions are logical consequences of the available premises is Beth's method of semantic tableaux, which consists in a systematic attempt to find a counterexample (a situation in which the premises would be true and at least one of one's assertions would be false). If it can be shown by that method that no counterexample can exist (in which case one's tableau can be *closed*), it has been shown that the relation of logical consequence holds for each of one's assertions. Here, we need not go into the details of Beth's method. There are four kinds of moves:

1. Initial moves (as described above)
2. Deductive moves
3. Assertive moves
4. Interrogative moves

The players move alternately. In a *deductive move* a player may take a number of steps in the construction of his Beth tableau (or tableaux). It must be avoided that such a move never ends (in Beth tableaux that may happen by repeated introduction of fresh individual constants), and therefore some rules are introduced to prevent this from happening. In an *assertive move* a player makes an additional assertion, which is then added to the statements that count as premises for his interlocutor. In an *interrogative move* a player addresses a question to his interlocutor. This can be a *propositional question* (yes/no question) but also a *wh-question* (starting with "where," "when," "who," etc.). In the simplest variant of the game, a question is allowed only if its presupposition is available as a premise for the questioner (either by the initial move or by an assertive move of the other or by his own deductive moves). An interrogative move is to be followed by an assertive move of the other in which the latter provides a direct and full answer to the question.

³⁰ For the logic and semantics of interrogatives, see Åqvist (1965, 1975) and Hintikka (1976).

³¹ Our presentation takes into account, without mentioning technicalities, the additional specifications given by Hintikka and Saarinen in an earlier publication (1979). This paper purports to be a sequel to a paper to be published by Hintikka in the same year ("Information-seeking dialogues: A model," *Erkenntnis*, 14), which we were unable to locate. However, we surmise that the model in that paper, which may never have appeared in print, is the same as the one we are discussing, which (though, presumably, not published before 1981) was presented at the symposium "Formal and dialectical logic" at Bad Homburg in April 1978. In any case, the remarks in the paper by Hintikka and Saarinen (1979) are perfectly to the point with respect to the model in Hintikka's paper of 1981.

As to winning and losing, Hintikka proposes the following rule:

(i) If a player has closed his *tableau* while his opponent has not done so, he has won and the opponent has lost. (ii) If the player cannot give a full answer to his opponent's question, he has lost and the opponent has won. (1981, p. 225)

It may be apparent, even from this brief sketch, that the model displays both information-seeking and argumentative features. Since information-seeking is mostly thought of as a cooperative activity and argument as at least partly competitive, this raises the question of how to classify this model with respect to competitiveness. Given the rule of winning and losing just quoted, the competitive character of the model is evident, but Hintikka insists that though "there is an element of competition involved," yet the ends of the players "are not by any means incompatible" (1981, p. 216). If both parties can close their tableaux (i.e., show that their assertions follow from those of the other), a common result will have been reached. Since only one of the players can win, this amounts to the insight that, for both winner and loser, there are other payoffs than formally winning and hence that in that respect the game could be cooperative. In case the two initial theses are incompatible (or even contradictories of one another), the competitive character will be more prominent. "Such a dialogue might perhaps be called a *dispute*" (1981, p. 16).

One may wonder why anyone would want to engage in an information-seeking dialogue of this kind. According to Hintikka and Saarinen (1979, p. 356), this question is "the most basic question concerning dialogical games: Why engage in them?" If one engages into them merely in order to win, "each player is obviously the better off the closer his (her) thesis is to a tautology (truth of logic). Why should any player put forward a thesis which is not a trivial logical truth?" (1979, p. 357). The answer is in the payoffs. As Hintikka and Saarinen write:

An answer to our problem can be given by making the payoff of the game for a given player dependent on the information-content of his (her) final thesis (more properly speaking, the conjunction of all his theses). The more informative this thesis, the higher the payoff. (1979, p. 357)

In the same vein, it is suggested that players are to make *side payments* for asking questions with nested quantifiers and for introducing nonlogical vocabulary that does not occur in the assertions of the other (Hintikka 1981, p. 226). It would then be most profitable to derive a highly informative thesis using relatively simple and to-the-point questions.

Though one can agree to the usefulness of such an intellectual exercise, it is still not clear what its main goal is supposed to be. In view of the rule for winning and losing quoted above, the game seems to combine an argumentative discussion about the theses with a kind of quiz. If the main goal is to argue about the theses, it is not so clear why the answers to questions should count as *assertions* of the answerer, i.e., propositions the answerer should try to derive from the premises available, instead of counting as mere *concessions*, i.e., propositions

granted as premises to the questioner. If the focus is on the quiz, trying to find a question the other cannot answer would be a primary strategy. It is doubtful that the game was intended in that way. Rather the game would be intended as modeling a kind of mutual inquiry, each player inquiring into the position of the other. As such it could serve as a basic dialogical game allowing several variants. One variant Hintikka mentions is that of game between an Inquirer and Nature:

We may think of α as a scientist or inquirer of some other kind and β as Nature or as a comparable impersonal source of information. Thus β 's questions fall off [...] We may further think of B_0 as a constant basic theory of α 's while the different choices of the A_0 represent different hypotheses α is trying to prove by "putting questions to Nature." (1981, p. 224)

Another variant would yield "an interesting model for the unravelling of tacit knowledge. . ." (1981, p. 230). In that case the model would represent an interior dialogue rather than discussion between two persons.

If the model is taken to represent a dialogue between two parties, a distinction can be made between the internal reasoning of each party (the tableau construction) and the external part of the dialogue (assertions, questions, and answers). Both are represented in the model. This feature is quite remarkable, since most models represent either the internal reasoning (as natural deduction systems do) or the external dialogue (as the dialogues of the Erlangen School), but not both.³²

In later publications by Hintikka, the model was developed into a model of reasoning and questioning in a context of inquiry: the interrogative model. The symmetry of the roles of α and β is replaced by the asymmetry between the roles of the Inquirer, or Myself, on the one hand, and Nature, or the Oracle, or the Answerer, on the other: the task of Nature is just to answer questions (if possible). Consequently, the interrogative model is not a model of argumentative discussion, but a model of reasoning and of interrogative strategies in a context of inquiry. Of course, that does not mean that the interrogative model is of no account for those mainly interested in argumentation. On the contrary, models of reasoning are generally relevant for argumentation studies and even more so when the way premises are obtained is taken into account. In Hintikka's interrogative model, which we shall here not further discuss, finding the premises is at the focus of attention.³³

³² Another model combining the internal reasoning with the external dialogue was elaborated in considerable detail by Heggelmann in the second part of his noteworthy book on formal dialectic (1985).

³³ In Hintikka and Hintikka (1982), a paper read at the "Groningen conference on the theory of argumentation" in 1978, a game is presented that is inspired by Sherlock Holmes rather than by Socrates. It can be regarded as an early version of the interrogative model. For this model, see further, for instance, Hintikka (1985, 1987, 1989) as well as the textbook Hintikka and Bachman (1991). In Hintikka (1987) the model is used to gain a better understanding of Aristotle's methodology in the *Topics* and *Sophistical refutations*. An application to the discussion about *ad verecundiam* is Bachman (1995).

6.4 Rescher's Dialectics

Even though Nicholas Rescher's investigations into dialectics (1977, 2007) were, in his 1977 book, primarily intended to contribute to epistemology and philosophy of science and gained an even wider scope in his 2007 book, they can also be seen as contributions to a theory of argumentation. Since the kind of dialectic Rescher sets out to explore in the earlier volume is by him characterized as that of "disputation, debate, and rational controversy," it is not surprising that in his work issues crop up that are at the focus of interest of argumentation theorists. Rescher's aim is to provide "a dialectical model for the rationalization of cognitive methodology – scientific inquiry specifically included." For this he focuses on disputation, which "exhibits epistemological processes at work in a setting of socially conditioned interactions," and thus "provides a useful antidote" to Cartesian "cognitive egocentrism." Moreover, "the theme of the dialectical process will have to be continuous with that of probative propriety." Consequently, "dialectics is not so much a vehicle for effective persuasion as for reasonable argumentation" and a "mechanism of rational validation" (1977, pp. xii–xiii).³⁴

Accordingly, the prime aims of the present discussion are to exhibit the sociocommunal roots of the foundations of rationality, to provide an instrument for the critique of scepticism implicit in the cognitive solipsism of the Cartesian approach, and to illuminate the communal and controversy-oriented aspects of argumentation and inquiry—*scientific inquiry in particular*. (Rescher 1977, p. xiii)

In his *Dialectics* of 1977, Rescher starts with an investigation of formal disputations as they were conducted at medieval universities. For these disputations he constructs an adversary dialectical model, which – being formal in the regulative sense (formal₃), the a priori sense (formal₄), and largely in the linguistic sense (formal₂), but not in the logicity sense (formal₅) – we would be prepared to call a "formal dialectical system" (not Rescher's term). Thence, he moves on to a non-adversary and probative dialectical model of inquiry: unilateral dialectics, which can also be applied by a solitary arguer. In this the structure of the model remains fundamentally the same. Rescher speaks of the "isomorphism of the disputational and probative versions of dialectic" (1977, p. 53). The last chapter explores the prospects of an adversary and disputational model for scientific inquiry in which the scientist is seen as a *Proponent* "who is concerned to maintain a thesis and seeks to build the best case for it that he possibly can" (1977, p. 110). The scientific community provides *Opponents* "who challenge this thesis in an adversary manner, probing for its weak points and seeking to impede its acceptance," as well as "a larger, neutral body of concerned but otherwise uncommitted bystanders, who effectively act as *arbiters* of the 'dispute'" (1977, p. 111). This disputational model is to provide a viable alternative for both Carnap's *confirmationism* and Popper's *falsificationism*. For, viewing scientific inquiry as a social enterprise, this

³⁴ The fragments quoted in this paragraph appear in the same order in the original (1977, pp. xii–xiii).

model is able to accomplish a synthesis between these opposing doctrines, in which confirmation and falsification both get their place (1977, Sect. 8.4). In Rescher's second book on dialectics, written thirty years later, we find, beside a somewhat shorter version of the formal dialectical system mentioned above, discussions of some other kinds of dialectic, as well as a brief history of dialectic.

6.4.1 Rescher's Model for Formal Disputations

In the remainder of this section, we shall briefly sketch Rescher's first model, which we select because its contents most aptly illustrate a way to formally approach argumentation.³⁵ There are three roles: *Proponent*, *Opponent* (or *Respondent*), and *Determiner*. The Proponent is to start the disputation by presenting a thesis, the Opponent is then to object to the thesis, and the Proponent is to defend his thesis by putting forward other assertions (theses), to which the Opponent again may object, leading to a further defense by the Proponent, and so on. The Determiner is to preside "as referee and to judge over the conduct of the dispute" (Rescher 1977, p. 4); he does not take part in the discussion. Until the disputation ends, Proponent and Opponent move alternately. Rescher does not specify in what circumstances a disputation is supposed to end and the Determiner is to pronounce his judgment. Presumably, it will end when one of the discussants gives in or when the time set for the disputation has been used. Neither does Rescher specify a language to be used by the discussants, but he presumes that the apparatus of propositional logic is available. So we may as well suppose that the language used is one of propositional logic (with propositions P , Q , ...), supplemented by three new symbols Rescher introduces for speech acts: "!", "†," and "/" and a symbol for the concatenation of speech acts: "&."³⁶

The three speech acts (called *fundamental moves*,³⁷ 1977, p. 6) are:

1. Categorical assertion: $!P$ (for "It is maintained (by me, the assertor) that P .")
2. Cautious assertion: $\dagger P$ (for " P 's being the case is compatible with everything you have said.")
3. Provisoed assertion: P/Q (for " P generally (or usually or ordinarily) obtains provided that Q .")

Of these speech acts the first can be performed only by the Proponent and the second only by the Opponent, whereas a speech act of the third kind can be performed by either.

³⁵ We shall make use mainly of Rescher's book of 1977 rather than that of 2007, because the account in the former is more inclusive and contains fewer misprints.

³⁶ Rescher uses "&" also as the symbol for conjunction of propositions, but for that use we shall stick to " \wedge ." Thus, at this point we make, in the symbolism, a distinction Rescher does not make.

³⁷ Or *basic moves* (Rescher 2007, p. 20)

Categorical and cautious assertions may occur by themselves as complete moves in a formal disputation (a dialogue), but a provisoed assertion P/Q must always be accompanied by either $!Q$ (in the Proponent's case) or by $\dagger Q$ (in the Opponent's case). Thus, there are actually two kinds of moves for the Proponent:

1. Categorical assertion: $!P$
2. Categorically provisoed assertion: $P/Q \& !Q$ ³⁸

and two kinds of move for the Opponent:

1. Cautious assertion: $\dagger P$
2. Cautiously provisoed assertion: $P/Q \& \dagger Q$

Thus, between Proponent and Opponent there is a marked asymmetry of roles.

1. The proponent must inaugurate the disputation. And he must do so with a categorical assertion of the thesis he proposes to defend.
2. All countermoves involving categorical assertion [...] are open to the proponent alone. Moreover, *the proponent's every move involves some categorical assertion*: he is the party on whom it is incumbent to take a committal stance at every junction. The "burden of proof" lies on his side throughout.
3. All countermoves involving a [cautious assertion]³⁹ [...] are open to the opponent alone. Moreover, *the opponent's every move involves some [cautious assertion]*: he is the party who need merely call claims into question and carries no responsibility for making any positive claims. (Rescher 1977, pp. 17–18; 2007, pp. 25–26)

For simplicity, Rescher supposes that in formal disputations, speech acts of provisoed assertion P/Q are always correct in the sense (we would now say) that the default rule underlying the speech act holds (1977, p. 8; 2007, p. 21).⁴⁰ In a fully formalized version, this requires there to be a publicly accessible set of agreed-upon default rules on which the participants can base their speech acts of provisoed assertion. If we look upon the moves of categorically or cautiously provisoed assertion as arguments, this stipulation means that irrelevant arguments for a proposition P are excluded. But it does not mean that a provisoed assertion P/Q cannot be attacked. It can be attacked by making a distinction. For instance, if the Proponent has put forward a categorically provisoed assertion $P/Q \& !Q$, the Opponent may challenge not only the component $!Q$ (by a cautious denial $\dagger \neg Q$ or a cautiously provisoed assertion $\neg Q/R \& \dagger R$, for some R) but also the component P/Q by making a so-called *weak distinction*: $\neg P/(Q \wedge S) \& \dagger (Q \wedge S)$, for some S . By this weak distinction the Opponent indicates that though Q by itself may militate for P ,

³⁸ Rescher speaks of *provisoed (counter) assertion* also in case the complete move is meant. We here introduce the term *categorically provisoed assertion* to mark the distinction between the incomplete (fundamental or basic) move P/Q and the complete move $P/Q \& !Q$. For a similar reason, we introduce the term *cautiously provisoed assertion*.

³⁹ Rescher writes "challenge or cautious denial," which is a cautious assertion $\dagger \neg P$ launched against the Proponent's $!P$ (or $\dagger P$ against $! \neg P$), but Rescher's remark is intended to apply to moves involving any cautious assertion $\dagger P$.

⁴⁰ This default rule tells us that P can be inferred from Q , unless certain assumptions can be shown to fail. For default rules and non-monotonic logic, see Sect. 11.2 of this volume.

Moves by the Proponent	Reactions by the Opponent
Categorical assertion: $!P$	Cautious denial: $\dagger\neg P$
	Cautiously provisoed denial: $\neg P/Q \& \dagger Q$
Categorically provisoed assertion: $P/Q \& !Q$	Cautious denial: $\dagger\neg Q$
	Cautiously provisoed denial: $\neg Q/R \& \dagger R$
	Weak distinction: $\neg P/(Q \wedge S) \& \dagger(Q \wedge S)$
Moves by the Opponent	Reactions by the Proponent
Cautious assertion: $\dagger P$	Categorical counterassertion: $!\neg P$
	Categorically provisoed counterassertion: $\neg P/Q \& !Q$
Cautiously provisoed assertion: $P/Q \& \dagger Q$	Categorical counterassertion: $!\neg Q$
	Categorically provisoed counterassertion: $\neg Q/R \& !R$ or $\neg P/R \& !R$
	Strong distinction (a special case of $\neg P/R \& !R$) : $\neg P/(Q \wedge S) \& !(Q \wedge S)$

Fig. 6.4 Moves and reactions to moves in formal disputation (The propositional formula used in the denial of $!P$ is $\neg P$ if P is not itself a negation; otherwise, if $P = \neg P'$, the formula used is P' , analogous in similar cases. The second kind of categorically provisoed counterassertion has been added in view of move (2) in Rescher's third example on p. 21 of Rescher (1977).

it may fail to do so in the present circumstances, because, for all that the Proponent has said, it could also be the case that S , which conjoined to Q , militates for $\neg P$. Similarly, if the Opponent has put forward a cautiously provisoed assertion $P/Q \& \dagger Q$, the Proponent may challenge not only the component $\dagger Q$ (by a categorical denial $!\neg Q$ or a categorically provisoed assertion $\neg Q/R \& !R$, for some R) but also the component P/Q by making a so-called *strong distinction*: $\neg P/(Q \wedge S) \& !(Q \wedge S)$, for some S (Rescher 1977, pp. 11–12). In Fig. 6.4 we display all possible types of reactions to moves that may be made by either the Proponent or the Opponent.

The supply of possible reactions is further enlarged by adding reactions to logical consequences of categorical assertions. For instance, if the Proponent has asserted the propositions P and Q and R is a logical consequence of these propositions taken together, the Opponent is allowed to move as if the Proponent had also asserted R (Rescher 1977, p. 9; 2007, p. 23).⁴¹ This stipulation presupposes that logical consequence relations are fully perspicuous for the participants, which

⁴¹ We take it that in this passage “the provisoed denial $\neg P/Q \& \dagger Q$ ” must be read as “a provisoed denial $\neg Q/R \& \dagger R$.”

Proponent (Peter)		Opponent (Olga)	
(1)	$!P$ Categorical assertion	(2)	$\neg P/\neg Q \& \dagger \neg Q$ Cautiously provisoed denial
(3)	$!Q$ Categorical counterassertion	(4)	$\neg Q/R \& \dagger R$ Cautiously provisoed denial
(5)	$! \neg R$ Categorical counterassertion	(6)	$R/S \& \dagger S$ Cautiously provisoed denial
(7)	$\neg R/(S \wedge T) \& !(S \wedge T)$ Strong distinction	(8)	$\neg Q/U \& \dagger U$ Cautiously provisoed denial (of (3))
(9)	$Q/((U \wedge V) \& !(U \wedge V))$ Strong distinction	(10)	$\neg Q/((U \wedge V) \wedge W) \& \dagger (((U \wedge V) \wedge W))$ Weak distinction

Fig. 6.5 A formal disputation

may be plausible if one restricts oneself to, say, propositional logic, but not for logic in general.

To obtain a formal dialectical system from the present description of moves and reactions to moves by other moves, we must stipulate that these, together with the initial move of categorical assertion made by the Proponent, cover all the possible ways there are, for the Proponent and the Opponent, to make a move. Long chains of moves can be constructed, since each move of a type occurring on the right of Fig. 6.4 is also of a type occurring on the left (counterassertions and denials being assertions and distinctions being provisoed assertions). Except for the Proponent's initial categorical assertion, each move must be a reaction to some move of the other, but not necessarily the other's latest move: in principle any number of moves reacting to one and the same move is allowed. However, no move may simply repeat an earlier move.⁴² Figure 6.5 (adapted from Rescher 1977, p. 17) illustrates the structure of a formal disputation according to the rules.

To make the example more concrete, it can be supplemented by the following assignment of propositions to the letters P , Q , etc. (see Rescher 1977, p. 16):

P : Peter knows that this is a human hand.

Q : Peter is certain that that is a human hand.

R : Peter's senses mislead Peter in this case.

S : Peter's senses have misled Peter in other cases somewhat like this one.

T : The cases in which Peter's senses have misled Peter were different in some key respects from the present case.

U : It is surely possible that Peter's senses might err in this case.

V : The possibility that Peter's senses might err in this case is only a conjectural one.

W : In philosophical disputations like the one we are having conjectural possibilities do count.

⁴² In determining whether two utterances of moves count as utterances of the same move (the later one being a repetition of the earlier one), logically equivalent propositions are treated as identical.

6.4.2 Remarks About Rescher's System

Rescher's formalization offers opportunities for analyzing the concepts of *commitment* and *concession*. The Proponent incurs a *commitment* to a proposition by categorically asserting that proposition, which happens in each one of his moves. A commitment is discharged (or transformed into an indirect commitment) when it is defended by a categorically provisoed assertion (in Fig. 6.5, this happens in moves (7) and (9)).⁴³ The Opponent *concedes* a proposition *P* to which the Proponent has committed himself "when he subjects it to a distinction," that is, when *P* appears as the first conjunct in a weak distinction, and also "when he fails to attack it when given as an opportunity to do so" (Rescher 1977, p. 21; 2007, p. 28). In contrast to what is permitted in Lorenzen's dialogues, concessions can be revoked.

It may be noted that, in contradistinction to the dialogue games of Lorenzen and those of Hintikka, in Rescher's formal disputations, the complexity of statements does not decrease as the dialogue advances, but rather seems inclined to increase. It is not to be expected that a disputation will automatically end by reaching the level of elementary statements nor that the winner will be formally determined by the way it ends. Therefore, a Determiner is needed. When the altercation between the Proponent and the Opponent happens to come to an end (either by lack of arguments or by lack of time or by mutual consent or for whatever reason), the Determiner is to adjudge the dispute "with a view to assessing what adversary deserves to be counted as the victor" (1977, p. 23; 2007, p. 29). Here two criteria come into play. According to the *formal* criterion, the Determiner is to judge whether all moves in the disputation conform to the stipulated rules of disputation (including those of the underlying logic). According to the *material* criterion, the Determiner is to assess "the extent to which the opponent drove the proponent into implausible commitments" (*ibid.*). The strategies of both parties in the disputation must aim at obtaining a favorable verdict from the Determiner:

The proponent has to cover his commitments in a maximally plausible way; the opponent tries to force him into more difficult commitments by introducing cleverly contrived distinctions that push his adversary in this direction. [...] And "victory" is determined by how cogent a case the proponent manages to make relative to the possibilities at his disposal through the mechanisms of plausibility and presumption.

The pivotal facet of the "determination" of a disputation is thus its crucial dependence upon a means of evaluating the plausibility (acceptability) of the theses upon which the proponent is – in the end – driven by the opponent to rest his case. This is what fixes the aim and object of the whole enterprise and indeed determines its entire strategy. For the proponent is ever striving to lead his case towards the secure ground of plausible contentions and the opponent is ever seeking to prevent his reaching any such safe harbor of plausible and presumption-secured contentions. (Rescher 2007, pp. 29–30; see also 1977, pp. 23–24, italics according to 1977)

⁴³ We suppose that the notion Rescher (1977, pp. 20–21; 2007, p. 27) introduces can be extended to cover these cases.

Obviously, determination is a part of disputation that Rescher did not formalize. The parts of disputation he did formalize, however, are remarkable enough to earn him a place among the formal dialecticians.

6.5 Barth and Krabbe on Formal Dialectics

Else Barth and Erik Krabbe's formal dialectics,⁴⁴ which they put forward in the third chapter of their *From Axiom to Dialogue: A Philosophical Study of Logics and Argumentation* (1982), provides systematic foundations from the point of view of conflict resolution for such systems for formal and material dialogues as those proposed by the Erlangen School (Sect. 6.2 above). Barth and Krabbe's primary purpose in that chapter is "to develop acceptable rules for verbal resolution of conflicts of opinion" (1982, p. 19). They restrict themselves to such resolution-oriented discussions as ensue from a *conflict of avowed opinions*, which consists of four elements: two *parties* (*P* and *O*), a *thesis* (*T*) presented by *P* to *O*, and a (possibly empty) set of *concessions* (*Con*) presented by *O* to *P* (the concessions correspond to the Opponent's hypotheses in Kamlah and Lorenzen's logical propaedeutic). Moreover, *O* has challenged *P* with respect to *T* and relative to *Con*, that is, she has indicated that – in spite of the concessions – she does not accept the thesis. In the simplest case, there are, as we shall here assume, no further challenges that contribute to the conflict. What is at stake in such discussions is whether or not, in the light of *Con*, *T* is to be accepted.

A resolution of a conflict of avowed opinion generally consists of the withdrawal of either the thesis or the challenge. In order to develop reasonable rules for discussions that aim at the resolution of conflicts, Barth and Krabbe first propose some general norms for reasonable discussion, then rules to implement these norms, and sometimes further rules to implement earlier introduced rules, and so on. This hierarchical ordering of rules allows one to use rather vague concepts higher up in the hierarchy, while getting to a precise description of dialectical systems at the bottom. Also it allows one to explore various options of how to implement the norms and thus yields a plurality of dialectical systems.⁴⁵

Using indices as explained above (Sect. 6.1), Barth and Krabbe dub their dialectical systems: systems of *formal₃ dialectics*, i.e., formal in the regulative sense (1982, p. 19), but that does not exclude the inclusion of *formal₂* rules (formal in the linguistic sense). Indeed, Kamlah and Lorenzen's rules for the use of logical

⁴⁴ Barth and Krabbe (1982, p. 19) say they took their expression *formal₃ dialectics* from Hamblin (1970). To be precise, however, Hamblin's expression was *formal dialectic*, without an "s" at the end (and, of course, without a subscript). We prefer Hamblin's original term but shall sometimes use the other one (with or without index) when discussing the work of Barth and Krabbe.

⁴⁵ For the hierarchical structure of formal dialectics, see also Barth (1982).

constants, or variants of these rules, are part and parcel of the systems. Yet, the formal₂ rules are all found at the very bottom of the hierarchy, and one might conceive of ways to avoid the introduction of formal₂ rules. The systems of formal₃ dialectics are a priori constructed normative systems (formal₄) rather than descriptive systems; some of them are formal₅ (nonmaterial systems), and others are not (material systems).

Like Kamlah and Lorenzen, Barth and Krabbe distinguish three main alternatives for a system of dialogue rules.⁴⁶ Moreover, they discuss nonmaterial (formal₅) variants (using formulas) and material variants (using interpreted statements) of each of these, as well as various options for the selection of logical constants. For one type of mixed conflict (*mixed conflicts under complete opposition*), they propose a material system of formal dialectics (1982, Sect. IV.5.2). This system does not belong to one of the three main alternatives.

6.5.1 Roles

Just like the logical propaedeutic of the Erlangen School, formal dialectics treats argumentation as a dialogical process. Again, two roles are distinguished: the role of Proponent and the role of Opponent. The letters “*P*” and “*O*” we used in our formulation of the definition of a conflict of avowed opinion designate the parties that usually (though not always) assume the roles of Proponent and Opponent, respectively. Argumentation is the totality of moves made by the interlocutors taking part in the discussion in their argumentative roles as Proponent and Opponent. The rules presented in formal dialectics lay down what moves are permissible in a discussion, in which circumstances a Proponent has successfully defended a thesis and in which circumstances an Opponent has successfully attacked one. The rules of formal dialectics thus standardize reasonable and critical discussions.

The language user who has taken upon herself the role of *O* systematically tries to demonstrate that, on the basis of *Con*, it is not necessary to accept *T*, and the language user who has assumed the role of *P* systematically tries to show that it is. Thus, performing the role of *O* implies a persistent *attacking* of *T* and performing the role of *P* a persistent *defending* of *T*. Therefore – in contrast to what would be expected in actual discussions – *O* has no thesis of her own to defend, and *P* has nothing to attack. *P* may indeed defend a statement of his own by means of a *counterattack* against an attack by *O*, and this may look like an attack at one of the concessions, but actually these counterattacks are not attacks (or challenges, as

⁴⁶ Besides a *constructive* dialectic, Barth and Krabbe discuss *minimal* dialectic and *classical* dialectic. Constructive and classical dialectical systems correspond to the similarly named dialogue games of Kamlah and Lorenzen, but the minimal systems are just a variant of the constructive ones and differ from Kamlah and Lorenzen’s strictly constructive dialogue games.

one may prefer to say) and do not express nonacceptance or doubt. Rather these moves constitute questions, by which *P* seeks to exploit the concessions for his defense. This distinction between attacks (challenges) and counterattacks (questions) is implicit, but not clearly expressed, in the exposition by Barth and Krabbe.⁴⁷

The distribution of roles described above implies that the rules of formal dialectics formulated by Barth and Krabbe in terms of these roles are restricted to what they call *simple* or *pure* conflicts. Conflicts in which both language users have a thesis to defend, they term *mixed* (1982, p. 56). Systems for mixed conflicts do not feature a Proponent and an Opponent: here the roles are called “Black” and “White” (1982, p. 109).

The rules of formal dialectics, at the bottom of the hierarchy of rules, lay down the manner in which *O* may attack *T*, the manner in which *P* may defend *T*, the ways *P* may put forward counterattacks (questions), and the ways *O* may answer these, as well as the precise circumstances in which certain moves can be made, and also when one of the two parties wins and who the winner is. We shall not list all the rules formulated by Barth and Krabbe – there are more than thirty of them – but will confine ourselves to a concise survey.

6.5.2 The Rules of Formal Dialectics

Systems of formal dialectics consist of seven different groups of rules, each of which serves a different purpose. To start with, there is a group of *elementary rules* that indicate, in general terms, the kind of discussion the authors envisage. The nonelementary rules of formal dialectics are grouped to correspond to the various requirements that the system is intended to meet, namely, that the system be *systematic*, *realistic*, *rewarding*,⁴⁸ *thoroughgoing*, *orderly*, and *dynamic*. We shall review these requirements one by one. Each of these requirements relates to one *fundamental norm*, which states the purpose of the rules belonging to the group and which – with one exception – one finds formulated as the first rule of the group. Below, we shall for each of these groups state this fundamental norm, after which we present some of the rules that are meant to implement the norm. In our exposition below, we shall confine ourselves to rules that hold in all (or most) systems proposed by Barth and Krabbe (there are some deviations in the rules for classical and in those for material systems). At the end, we shall present an example of a chain of arguments in a specific system of formal dialectics.

⁴⁷ The distinction has been made explicit by Walton and Krabbe (1995, Sect. 4.4). There *O* challenges and answers, whereas *P* questions and defends.

⁴⁸ Here we introduce a term of our own, since Barth and Krabbe do not formulate a fundamental norm for the corresponding group of rules (1982, Sect. III.8).

6.5.3 Elementary Rules

The *first* elementary rule says that there must be language users who assume the roles of *Proponent* and of *Opponent*. The content of these roles is defined in terms of two *dialogue attitudes*: the dialogue attitude of *contra-position* and that of *pro-position* toward a statement. *Contra-position* with regard to a statement *S* implies an unconditional right to attack *S*; *pro-position* implies a conditional obligation to defend *S*, i.e., the obligation to defend *S* when *S* is attacked. To start with, *P* is in *pro-position* to the thesis and in neither *pro-* nor *contraposition* to any concession, whereas *O* is in *contra-position* to the thesis and in *pro-position* to each of the concessions (1982, p. 58).⁴⁹

In the simplest case, one language user assumes the role of *P* and another the role of *O*. However, it is also possible for one language user to take on the roles of both *P* and *O* or for two or more language users to take on the same role. If, on the other hand, no language users can be found who are prepared to fulfill the roles of *P* and *O*, then no discussion falling within the scope of formal dialectics can take place. Of course, some other sort of discussion may ensue instead, such as one serving as an opportunity for the interlocutors to provide one another with information, but only if there are language users who voluntarily take upon themselves the roles of *P* and *O* will the rules of formal dialectics apply.

The *second* elementary rule clarifies the roles of *P* and *O*. According to this rule, *O* should adopt the dialogue attitude of *contra-position* with regard to any further statements of *P*'s (in the discussion) and the attitude of *pro-position* with regard to her own further statements. *P* is to adopt *pro-position* with regard to his own further statements and a neutral position (i.e., neither a *pro-* nor a *contra-position*) with regard to any further statements of *O*. This means that *O* may attack any statement of *P*'s and that *P* must defend his own statements when *O* attacks them. *P* may not attack *O*'s statements, except by way of defense through counterattack. By these stipulations the asymmetry of the roles of *P* and *O*, a characteristic of simple or pure conflicts, is established.

The *third* elementary rule states that there are two ways of defending a statement *S* once it has been attacked: *protective defense* (*pd*) and *counterattack* (*ca*). A counterattack must therefore be seen as a defending move, which means that it may be carried out by *P*, who by the terms of the second elementary rule would otherwise not be allowed to "attack" *O*'s statements.⁵⁰

The *fourth* elementary rule adds a rider to this, viz., that all attacking and defending moves, as well as all relevant attitudes of the discussants, must relate

⁴⁹ In Definition 6 (Barth and Krabbe 1982, p. 58), it is only stipulated that *P* is not in *contra-position* to any concession; that *P* is meant to be neither in *pro-position* to them is, however, implied by Fig. III.2 (1982, p. 62). One may think that *P* could be in *pro-position* to a concession in case his thesis is "the same" as one of the concessions, but the thesis and the concession will always count as different statements (utterances), though identical at the sentential level.

⁵⁰ As we saw above, the difference in purpose between attack and counterattack would make it advisable not to call them by these names, but rather talk of challenge and question.

to statements and that the range of words and syntactic forms that can be used in an admissible attack or defense is to be functionally determined by the syntax and wordings of the statement attacked or defended. Whether a certain move is permissible, Barth and Krabbe state, shall depend on what has been said, and not on intentions, beliefs, et cetera. They call this the *Principle of (verbal) Externalization of Dialectics* (1982, p. 60).

The *fifth*, and final, elementary rule lays down the consequences of violating one or more of the rules of formal dialectics. If either of the parties says anything that, according to the rules of formal dialectics, is not one of the permitted moves or does anything that is not permitted and detrimental to the other party's interests, the other party may withdraw from the discussion without thereby losing it. In a strong version of this rule, the party guilty of the violation will then forfeit all its rights in the discussion and can even, if desired, be censured as "irrational with respect to the present dialectical situation." The importance of this rule, according to Barth and Krabbe, is that it makes it risky to make irrelevant remarks in a discussion – for example, by changing the subject or by advancing an *argumentum ad hominem* – as well as to insult the other party, threaten him, deprive him of his liberty, or cause him actual physical harm.

6.5.4 Systematic Dialectics

The *fundamental norm of a systematic dialectics* (1982, p. 63) requires that *P* always have an opportunity to defend an attacked statement by another statement (an intermediary thesis) to which he assumes the pro-position. Compliance with this norm is achieved by making the defense progress recursively. Every intermediary thesis is therefore treated as a conditional defense of the previous (intermediate or initial) thesis. This implies that if an intermediate thesis gets in some way to be defended unconditionally, the preceding ones, and ultimately the initial thesis, will then, retroactively, have been defended unconditionally as well.

Since there may occur different strands of defenses within one discussion, care must be taken to keep these disentangled when formulating the rule for recursive defense (Barth and Krabbe 1982, p. 65, FD S2). For this purpose, discussions are divided into *chains of arguments*. These are to be compared to the different rounds in the dialogue games of Kamlah and Lorenzen (see Sect. 6.2 above). For instance, distinct attacks, by *O*, on parts of a conjunction would belong to distinct chains of arguments. These chains of arguments are then subdivided into *local discussions* with *local theses*. A new local discussion starts off with each new attack by *O*, the statement attacked being its local thesis, whereas the set of local concessions comprises all concessions present in the chain. Each local discussion is, in a sense, a dialogue in its own right – centered upon its own local thesis – which besides a unique attack by *O* may contain any number of counterattacks (questions) by *P*. Local discussions, finally, are subdivided into *stages* (turns to speak).

6.5.5 Realistic Dialectics

The gist of the *fundamental norm of the possibility of unconditional defense* (realistic dialectics; 1982, p. 68) is that *P* should, in certain cases, have an opportunity to successfully complete the unconditional defense of a statement that has been attacked. A rule to implement this, which *P* may in favorable circumstances avail himself of, states that a local thesis can be defended unconditionally by means of an appropriate *Ipse dixisti!* remark. An appropriate *Ipse dixisti!* remark consists of the utterance of the words *Ipse dixisti!* (or “You said so yourself!”) by *P* as soon as *O* concedes the local thesis (the statement in the current chain of arguments that was most recently attacked by *O*) or, conversely, as soon as *O* attacks a statement made by *P* which *O* herself conceded at an earlier stage of the current chain of arguments. The consequence of an unconditional defense of a local thesis by *P* is that *O* forfeits the right to continue the discussion *in the current chain of arguments*, and this means, as we shall see, that *O* has lost that chain.

6.5.6 Rewarding Dialectics

For this group of rules, no fundamental norm has been formulated by Barth and Krabbe. However, they say that “there must be some possible – spiritual, if not material – immediate result,” desired by those that engage in discussion.⁵¹ Otherwise, “why should the debaters enter into a discussion at all?” (Barth and Krabbe 1982, p. 71). The idea that there should be something to gain from a discussion could be called the *fundamental norm of a rewarding dialectics*. Barth and Krabbe implement this norm by rules that regulate winning and losing and their immediate consequences.

A chain of arguments will be lost by one party (and won by the other) as soon as the first party has lost or exhausted his rights to make moves in the chain. As we saw above, *O* loses her rights in a chain if *P* makes an appropriate *Ipse dixisti!* remark. So in that case *P* wins and *O* loses the chain. Exhaustion of rights occurs when the party that is to make a move has no right left that allows him to make a move. When one has to make a move but all one’s possibilities to execute an attack or a defense or to ask or answer a question have been exhausted, the chain is lost (and won by the other party). A chain that is won by one party (and lost by the other) is called *completed*.

If *P* succeeds in winning a chain according to the rules of formal dialectics, this does not automatically mean that he has won the discussion as a whole or that he has successfully defended the initial thesis. If and only if the chain won by *P* is the *last completed* chain in a terminated discussion, *P* has won the entire discussion and successfully defended the initial thesis *T* against *O*’s attacks. If, on the other hand, in a terminated discussion *P* has lost the last completed chain (or if no chain was

⁵¹ As pointed out in Note 48, Barth and Krabbe did not use the term *rewarding dialectics*.

ever completed), then *O* has successfully refuted *T*, and *P* has lost the discussion as a whole. Termination of the discussion may be caused either by loss or exhaustion of all rights or by external circumstances.

A loser of a chain or a discussion is required to announce that the other has won by rational means. The winner is permitted to announce that the other lost the chain or the discussion, provided he adds that the other has been “rational” throughout the debate.

6.5.7 Thoroughgoing Dialectics

The *fundamental norm of a thoroughgoing dialectics* (1982, p. 76) requires that *O* have a chance to test *P*’s thesis in all possible ways and that *P* be given the opportunity to defend his local thesis in all possible ways. This norm is implemented by means of rules enabling either party to abandon a lost or hopeless chain of arguments in order to start a new chain. Losing a chain, therefore, does not automatically mean loss of the entire discussion, since according to the rules of thoroughgoing dialectics, *O* can try various lines of attack, and *P* can try various lines of defense. However, opening a new chain must always be preceded by the abandonment (forced or voluntarily) of an old chain, which means that that chain is irrevocably lost.

6.5.8 Orderly Dialectics

The *fundamental norm of orderly dialectics* (1982, p. 77) requires that at every stage in the discussion, both parties’ rights and duties be clearly and accessibly defined. (Notice that the preceding rules leave it undetermined *how long* certain dialogue attitudes, rights, and duties are to remain in force.) This aim is achieved by taking advantage of the segmentation of each chain of arguments into a series of successive local discussions and by restricting the rights and duties arising out of *P*’s and *O*’s dialogue attitudes (see the second elementary rule) to these local discussions, instead of regarding them as applying to the discussion as a whole. As soon as a new local discussion begins, the rights and duties that originate in dialogue attitudes the parties had in the preceding local discussion become void. As we said before, a new local discussion arises whenever *O* attacks one of *P*’s statements; the newly attacked statement is then the new local thesis of the new local discussion. However, *O*’s preexisting concessions continue to apply.

6.5.9 Dynamic Dialectics

The *fundamental norm of dynamic dialectics* (1982, p. 79) requires that the rules of formal dialectics further the revision and flux of opinions. One rule to implement this stipulates that an inevitable result should be reached as quickly as possible. To achieve this, one should see to it that the rights of the parties to start new chains and

the length of chains, local discussions, and stages be limited. In other words, it is to be avoided that the parties have a chance to repeat themselves needlessly and thus prolong the discussion. To achieve this, the following rules are proposed⁵²:

1. If at a particular point the discussion can continue on more than one path (i.e., if various chains of arguments are possible), each path may only be taken once.
2. A statement (utterance) by *P* may be attacked, within a particular chain of arguments, only immediately after it has been put forward and hence cannot be made a local thesis by an attack by *O* more than once within the same chain of arguments.
3. A local thesis may not be repeated by *P* in the same chain, as long as *O* has not granted any additional concessions in that chain.
4. A counterattack of one particular sort may not be carried out on a statement more than once in the same local discussion.
5. Stages may not contain more than one utterance of one sentence.

Two other rules intended to implement the same norm are:

6. The only structural operators which may be used are those whose meaning-in-use is clearly established, that is, those operators of which it is clear how sentences containing them can be attacked or defended.
7. The meaning-in-use of operators must, where possible, be defined in such a way that attacks and defenses will lead to a decomposition of the sentences discussed.

To meet the requirements stated in (6) and (7), Barth and Krabbe propose, for the first time in their exposition, a formal₂ (formal in the linguistic sense) rule (1982, p. 87). This rule consists of Kamlah and Lorenzen's rules for the use of connectives, which rules Barth and Krabbe (1982, p. 87) call the "strip rules for logical constants" (see Fig. 6.1).⁵³ The forms of attack laid down there may be used both for *O*'s attacks and for *P*'s counterattacks (questions). The forms of defense indicate how *P* may protectively defend an attacked statement (see the third elementary rule above) and also how *O* may answer counterattacks (questions).

6.5.10 Attacks on Elementary Statements

Barth and Krabbe (1982, p. 87) add a rule for attacking elementary statements by simply calling them into question (Fig. 6.6). Since a further decomposition is not possible, this rule does not provide for any defense move beyond the recourse to an *Ipse dixisti!* remark. For the same reason, a counterattack by *P* targeting an elementary statement would not lead to further concessions. Therefore, the rule is not suitable for counterattacks on elementary statements, and hence Barth and

⁵² We do not quote these rules literally, but summarize what they amount to.

⁵³ Later they also introduce a variant of Kamlah and Lorenzen's rule for negation, in which they employ a constant for absurdity (Barth and Krabbe 1982, p. 93). Barth and Krabbe (1982) do not take into account quantifiers; for the way to handle them in formal dialectics, see Krabbe (1982a).

	Assertion (by <i>P</i>)	Attack (by <i>O</i>)	Defence (by <i>P</i>)
Elementary statement ⁵⁷	<i>A</i>	<i>A?</i>	None

Fig. 6.6 The formal₂ rule for Elementary statements

Krabbe propose that it may be used for attacks by *O* only.⁵⁴ A defense by *P*, in this case, can sometimes consist of an *Ipse dixisti!* remark; if that is not possible, the defense must be counteractive and should be aimed at getting the attacked elementary statement conceded.

6.5.11 An Example

We have skipped some details, but the constructive nonmaterial system of formal dialectics that results from the norms and rules we discussed thus far allows chains of arguments that correspond nicely to Kamlah and Lorenzen's constructive formal dialogues, a difference being that the latter dialogues do not have the *Ipse dixisti!* remarks. To see how a discussion develops according to these rules, we present a simple example of a chain of arguments (Fig. 6.7) together with some comment on each move.

6.5.12 Winning Strategies

Sometimes *P* or *O* may have a *winning strategy*. This means that the party concerned can select each of its moves in such a way that, whatever moves its adversary makes, *every chain* will be concluded with a victory for this party. If *P* has a winning strategy with regard to *T* in the face of *O*, who attacks *T* from *Con*, then we may say that *T* follows logically from *Con* or (using a “pragmatic concept of validity”) that the argument with premises *Con* and conclusion *T* is *valid*. Surely, it does not follow that *T* is *true*, for that need not be the case, unless the statements in *Con* are also true. If *P* has a winning strategy regardless of what *O* concedes and even of whether *O* concedes anything, then *T* is called *logically true* (on the strength of the dialectic system concerned). *P* then has a winning strategy with regard to *any* Opponent and *all possible* lines of attack or criticism (Barth and Martens 1977, pp. 83–84).

6.5.13 Discussion

In Fig. 6.7, we saw an example of a part of a dialogue (a chain of arguments) according to the rules of one of the systems discussed by Barth and Krabbe: a

⁵⁴ In material systems, there is yet another way for *P* to defend an elementary statement and also a rule that allows *P* to attack *O*'s elementary statements (Barth and Krabbe 1982, p. 105).

	Speaker	Move	Comment
1.	<i>O</i>	$A \rightarrow B$	The initial situation is shown above the dotted lines. <i>P</i> defends the thesis $A \rightarrow C$, the initial thesis, and <i>O</i> attacks it from a position given by $A \rightarrow B$ and $B \rightarrow C$, the initial concessions. This is the initial conflict. The language user who has assumed the role of <i>P</i> holds that the initial thesis has to be accepted by <i>O</i> (given <i>O</i> 's initial concessions), and the language user who has adopted the role of <i>O</i> disputes this.
2.	<i>O</i>	$B \rightarrow C$	
3.	<i>P</i>	$A \rightarrow C$	
	
4.	<i>O</i>	(?) <i>A</i>	The discussion opens with a move by <i>O</i> . <i>O</i> is the only one who can make a move, since <i>P</i> is neutral towards the statements made by <i>O</i> as concessions; also, given that his own thesis has yet to be attacked, <i>P</i> does not yet have anything to defend. <i>O</i> is in contraposition with regard to <i>P</i> 's thesis, and is thus entitled to attack it. According to the "strip rules for logical constants," <i>O</i> can do so in only one way: by uttering <i>A</i> as a concession. The question mark indicates that <i>A</i> is put forward as an attack.
5.	<i>P</i>	<i>C</i>	We have now reached a situation in which a statement by <i>P</i> has been attacked. Since <i>P</i> is in pro-position with regard to that statement, <i>P</i> is obliged to defend it. In 5 <i>P</i> opts for a protective defence, which according to the "strip rules" makes him assert <i>C</i> . However, <i>P</i> might also, in 5, have launched a counterattack against one of <i>O</i> 's concessions on lines 1 and 2. <i>P</i> could, in a nonmaterial dialogue, not have attacked the concession on line 4, since it is elementary. Only <i>O</i> may attack elementary statements. For the sake of clarity and simplicity, we have shown only one of the three possible lines of defence. (<i>P</i> can also win selecting either of the other two.)
6.	<i>O</i>	<i>C</i> ?	In 5, <i>P</i> made a new statement, and since <i>O</i> has nothing to defend, all <i>O</i> can do is attack this statement. <i>C</i> ? means that an attack is being launched against the elementary statement <i>C</i> .
7.	<i>P</i>	(?) <i>A</i>	According to the rules of (nonmaterial) formal dialectics, there is no protective defence against an attack on an atomic statement, so that in 7 <i>P</i> has to switch to a counterattack (a question). As a target of this question <i>P</i> chooses <i>O</i> 's first concession: in view of this concession <i>P</i> asks <i>O</i> either to concede <i>B</i> or to attack <i>A</i> . However, <i>P</i> could also have chosen the second concession. That way, too, he would have been able to ensure victory.
8.	<i>O</i>	<i>B</i>	We have now, for the first time, reached a situation in which one of <i>O</i> 's statements has been targeted by a question, and that gives <i>O</i> a right to answer the question. Here <i>O</i> does so by conceding <i>B</i> . But <i>O</i> might also have attacked <i>A</i> . However, that would immediately have led to her losing the chain, because she would have been attacking a statement, which she herself put forward in 4. She therefore opts for the first possibility (so we shall assume).
9.	<i>P</i>	(?) <i>B</i>	In 9 <i>P</i> carries out a counterattack on <i>O</i> 's second concession.
10.	<i>O</i>	<i>C</i>	<i>O</i> has been pinned down by <i>P</i> 's question in 9. She may answer either by conceding <i>C</i> , or by attacking <i>B</i> . In either case she loses: in the first case, which we have displayed in our example, because she is then conceding a statement which she attacked in her most recent attack, viz., move 6, whereas in the second case she would lose because she would be attacking a statement made by herself in 8.
11.	<i>P</i>	<i>Ipse dixisti!</i>	<i>P</i> concludes the chain with a win by making an appropriate <i>Ipse dixisti!</i> remark on the basis of <i>O</i> 's moves in 6 and 10.

Fig. 6.7 A chain of arguments according to the rules of formal dialectics

constructive nonmaterial dialectical system. This system as well as a number of other systems of theirs (minimal, constructive, and classical), Barth and Krabbe showed to be complete in the sense of being equivalent to extant systems of formal deduction or logical semantics.⁵⁵

⁵⁵ This equivalence is a purely extensional one: in each case it is proved that whenever *T* follows logically from *Con* in terms of winning strategies, *T* follows from *Con* in the corresponding extant deductive and semantic systems. This does not mean that dialectics, deduction theory, and semantics are equivalent for all purposes.

Barth and Krabbe (1982) do not claim, however, that with their formal dialectics they have produced a “‘complete,’ ready-for-use theory of argumentation” (p. 307). The relationship between argumentation theory and logic, they characterize as follows:

The subject called “Logic” corresponds to that part of the Theory of Argumentation that studies systems of language-invariant formal₃ dialectical rules and language-dependent formal₂ dialectical rules based on (formal₂) syntactical rules. (Barth and Krabbe, p. 75)

One of the first extensions they regard as necessary relates to formal₂ (formal in the linguistic sense) rules for other logical constants. In *From Axiom to Dialogue* (1982), they confine themselves to Lorenzen’s rules (and variants thereof) for using conjunction, disjunction, implication, and negation. Since Lorenzen and his associates had already introduced rules for quantifiers – the dialogical introduction of quantifiers was, in fact, one of Lorenzen’s original concerns – only a small step was needed, as Krabbe (1982a) has shown, to integrate rules for quantifiers with the other rules of formal dialectics.

The integration of modal logic, studied too by the Erlangen School, was more complicated. Krabbe (1985, 1986) proposed a number of systems and proved their completeness with respect to derivational and semantic systems of logic.

Barth and Krabbe echo Næss in emphasizing that an adequate theory of argumentation ought to pay attention not only to the issue of handling logical constants but also to questions of interpretation, definition, and clarification (“precization”) relating to nonlogical terms like “man,” “freedom,” and “revolution.” Other important topics are, in their opinion, fallacies, mixed discussions (for which they proposed one material system), and discussions between more than two parties. More attention should also be paid to the regulation of material moves such as ostensive moves and experimentation (Barth and Krabbe 1982, p. 308).

Barth and Krabbe (1982, p. 75) briefly point to the distinction between what they call *first-order rules* and *higher-order rules*. The rules that we discussed earlier are first-order rules; the higher-order rules are supposed to be discussion-promoting rules, but Barth and Krabbe (1982) do not elucidate this concept. Instead, they give a (not particularly clear) example: “Do not abuse the other party!” (p. 75).

A cautious start has since been made by van Eemeren and Grootendorst (1988, pp. 287–288) to elaborate the idea of higher-order rules – or, better, *higher-order conditions*. In *Reconstructing argumentative discourse*, van Eemeren et al. (1993, pp. 30–36) describe first-order conditions as representing constitutive elements of a code of conduct aimed at the resolution of disputes and second-order conditions as referring to the “discussion-minded” attitudes and intentions of the arguers presupposed by the code. Still higher-order conditions are required to enable the arguers to claim the rights and responsibilities associated with the argumentative roles defined by the code. In these authors’ view, these third-order conditions relate to political ideals such as nonviolence, freedom of speech, and intellectual pluralism as well as to practical constraints and resources for empowering critical discussion. It is clear, however, that much has still to be done before a system of

higher-order conditions can emerge that is as refined, precise, and ordered as the systems of first-order rules formulated by Barth and Krabbe.

Barth and Krabbe's formal dialectics, and the philosophical ideas of Barth, have been a source of inspiration for further research, not only by themselves, but by various other argumentation theorists as well. Barth herself, together with Martens, used the method of dialogue tableaux, even before formal dialectics had been fully developed, as a tool for analyzing fallacies, notably the *argumentum ad hominem* (Barth and Martens 1977). Grootendorst (1978) chose formal dialectics as the point of departure of his analysis of this fallacy. He concluded that the rules of formal dialectics do indeed exclude arguing *ad hominem*, but, in his opinion, no satisfactory analysis of this rhetorical move can be offered unless formal dialectics is supplemented with higher-order rules.

Van Eemeren and Grootendorst (1984, 1992a) studied argumentation starting from Barth's conception of rationality. In developing their "pragma-dialectical" approach to argumentation, they made use of many insightful distinctions propounded by Barth and Krabbe (see Chap. 10, "The Pragma-Dialectical Theory of Argumentation" of this volume). They observe that, just as in the dialogical logic of the Erlangen School, the situation that is taken as point of departure in formal dialectics is different from the ordinary starting point in argumentation. In argumentative discourse, initially one person advances a standpoint on which another person then casts doubt. Next, the reasons for the standpoint are advanced, followed by a possible critical response, and so on. The dispute is resolved when the other person accepts the standpoint on the basis of the reasons the arguer advances or when the arguer abandons the standpoint at issue as a result of the other person's critical responses.

The initial situation adopted by Barth and Krabbe in their standardization of dialogues represents a stage in the resolution of a dispute that does not arise until after the reasons of the arguer in defense of the arguer's standpoint have been advanced, and the arguer and the other decide to examine together whether this standpoint is tenable on the assumption that the reasons are. This means that they set out to check whether the conclusion contained in the standpoint indeed *follows* from the premises contained in the argumentation. The person addressed in the argumentation has then agreed to act as Opponent and to do so while having the arguer's reasons added as concessions to his or her own commitments.⁵⁶

⁵⁶ In ordinary discourse, it is highly unlikely that this rather artificial situation will arise in the initial stage, but it can, of course, be created later on in the discussion if so desired. Therefore, van Eemeren and Grootendorst (1984) included a method corresponding to Barth and Krabbe's device for use in a later stage of the resolution process. This method, incorporated in what they call the *intersubjective reasoning procedure*, is part of a whole series of evaluation procedures (van Eemeren and Grootendorst 1984, p. 169). For a different point of view, see Krabbe (1988), where the initial situation of formal dialectics is interpreted as a natural starting point.

6.6 Hamblin's Formal Dialectic

As we said in the first section of this chapter, Hamblin (1970) introduced the term *formal dialectic*. We shall now investigate how he understood the term and in what ways Hamblin's systems differ from those we have discussed thus far.

At the beginning of his book, after denouncing the deplorable state of treatments of fallacies in contemporary textbooks, Hamblin states a frequently quoted definition of *fallacious argument* (which he criticizes) as an argument "that *seems valid* but *is not so*" (1970, p. 12).⁵⁷ In his chapter on formal dialectic (Chap. 8, "[Communication Studies and Rhetoric](#)"), he returns to this definition when he proposes to "to explore the [first] half of the definition of fallacy a little further and be clearer what it is for an argument to *seem valid*" (p. 253). Hamblin argues against a psychological interpretation of seeming validity:

An *unsystematic* belief is not a candidate for the title 'logical fallacy' even when it is in the form of an implication and widely held.

To justify the application of the tag 'fallacy,' the seeming-valid must have a quasi-logical analysis. But what is the quasi-Logic within which this analysis is performed? (Hamblin 1970, p. 253)

In the case of formal fallacies, we may point to "a false logical doctrine" or the neglect of a true one, but if the alleged fallacy does "not rest on formal invalidity" (as in the case of begging the question) or, though formally invalid, is not generated by a "possible (spurious) formal principle" that would be responsible for its seeming validity, "we need to extend the bounds of Formal Logic; to include features of dialectical contexts within which arguments are put forward" (p. 254).

[...] there are prevalent but false conceptions of rules of dialogue, which are capable of making certain argumentative moves seem satisfactory and unobjectionable when, in fact, they conceal and facilitate dialectical malpractice (ibid.).

Thus, for a principled account of fallacies, we must turn to formal dialectic, which "it should be added, does not have as its sole justification the analysis of fallacies" (p. 255).⁵⁸

A *dialectical system*, according to Hamblin, "is no more nor less than a regulated dialogue or family of dialogues" (ibid.). The concept is quite general: "We can imagine a dialogue consisting of interchange of statements about the weather" (p. 256). In an often-quoted passage, Hamblin explains that dialectical systems may be studied in two complementary ways:

The study of dialectical systems can be pursued descriptively, or formally. In the first case, we should look at the rules and conventions that operate in actual discussions:

⁵⁷ Hamblin's intimation that "almost every account from Aristotle onwards" tells us so must be counted as a gross exaggeration. See Hansen (2002b).

⁵⁸ Hamblin's introduction of dialectical criteria of argument appraisal in the preceding chapter on the concept of argument (Chap. 7, "[Informal Logic](#)") may be seen as a first step to prepare the reader for the dialectical approach in Chap. 8, "[Communication Studies and Rhetoric](#)".

parliamentary debates, juridical examination and cross-examination, stylized communication systems and other kinds of identifiable special context, besides the world of linguistic interchange at large. A formal approach, on the other hand, consists in the setting up of simple systems of precise but not necessarily realistic rules, and the plotting of the properties of the dialogues that might be played out in accordance with them. Neither approach is of any importance on its own; for descriptions of actual cases must aim to bring out formalizable features, and formal systems must aim to throw light on actual, describable phenomena. (p. 256)

The difference between the dialectical systems in the two approaches here distinguished is that the formal dialectical systems are formal₄ (formal in the *a priori* sense) and the descriptive dialectical systems are not (see Sect. 6.1). In the chapter on formal dialectic, Hamblin is concerned with formal (formal₄) rather than with descriptive dialectical systems. He presents four examples of dialectical systems (with some variants): the *Obligation game* (of the schoolmen), the *Why-Because system with questions* (also known as *System H*), the *Greek game* (of Plato's earlier dialogues), and a game that might be called the *Game of inductive generalization*. More examples are put forward in Hamblin (1971), in which he deals with information-seeking systems. These games are not only formal₄ but also formal₃ (formal in the regulative sense), generally formal₂ (formal in the linguistic sense), and often formal₅ (formal in the logicity sense).⁵⁹

6.6.1 System H

Of the systems just mentioned, System H has been the most influential one. Hamblin carefully spelled out its rules but provided only one example of a dialogue in which these rules were put to work. A complete analysis of this example has been given by Krabbe and Walton (2011). Here we shall present only some of the rules, and a part of Hamblin's example.⁶⁰

There are two players or participants, called *White* and *Black*. "White moves first, but the system is otherwise symmetrical between them" (Hamblin 1970, p. 265). The underlying language of the system is a language of propositional logic, with the same connectives as were used in Sect. 6.2. We use *A*, *B*, *C*, . . . , *R* to refer to elementary statements of the language and *S*, *T*, *U*, . . . , *X* as variables for possibly complex statements.⁶¹ There is also an underlying logic in the form of *axioms*, which "occupy a privileged position," and *primitive definitions*. Hamblin does not give examples, but for axioms one may think of common logical axioms

⁵⁹ Systems that connect with the real world, and are therefore not formal₅, are the *Obligation game* (if the evaluation of the language announced as *Actual fact* is supposed to conform indeed to the actual facts, p. 260) and the *Game of inductive generalization* as far as it depends on knowledge of empirical facts, p. 280.

⁶⁰ The exposition paraphrases that of Krabbe and Walton (2011, pp. 247–253, 256).

⁶¹ In Sect. 6.2, *A*, *B*, *C*, etc. were used to refer to possibly complex statements. We here adapt our usage to Hamblin's.

such as the formula $A \rightarrow (B \vee A)$, whereas a case of primitive definition would be that of defining \rightarrow in terms of \vee and \neg , so that $S \rightarrow T$ can everywhere be replaced by $\neg S \vee T$ and vice versa.

Locution rules define, on the basis of the underlying language, the various dialectical locutions that can occur in the dialogues of the system.⁶² *Structural rules* (also called *dialogue rules*) define the preconditions and the postconditions of each kind of move.⁶³ *Commitment rules* define at each stage the contents of the *commitment store* of each player. A player's commitment store contains the statements (formulas of the underlying language) to which the player is committed. Axioms are indelibly contained in the commitment stores of both Black and White from the beginning.

Hamblin gives us a list of locutions, which may be read as fixing his set of locution rules (1970, p. 265); the comment in brackets is quoted from Krabbe and Walton (2011, pp. 248–249):

- (i) 'Statement S' or, in certain special cases, 'Statements S, T'.
- (ii) 'No commitment S, T, . . . , X', for any number of statements, S, T, . . . , X (one or more).
- (iii) 'Question S, T, . . . , X?', for any number of statements (one or more).

[The direct answers to the question are given by the list S, T, . . . , X. Since a question may be supposed to have at least two direct answers, "two or more" would be neater than "one or more."]

- (iv) 'Why S?', for any statement S other than a substitution-instance of an axiom.

[Hamblin thinks of a why-question as a challenge or request made to the respondent to provide a justification (an argument) for the statement queried. In other words, the respondent is expected to provide some premises (presumably ones that the challenger is committed to already, or can be brought to concede at future moves), and the statement queried by the why-question is supposed to be a conclusion implied by these premises (according to the axioms or logical rules for inferences in the system). Notice that "Why S?" is ungrammatical in case S is a substitution-instance of an axiom. Another way to stipulate that such formulas cannot be challenged would be to have a structural rule to that effect.]

- (v) 'Resolve S'.

[Such a resolution demand is thought of as referring to a situation where one's interlocutor is committed to both S and $\neg S$, asking him to withdraw either.]

Notice that, in contrast to the systems discussed before, System H does not allow one to put forward just S; one has to say "Statement S."

Among the structural rules are the following (Hamblin 1970, p. 266), comment in brackets quoted from Krabbe and Walton (2011, pp. 249–250)⁶⁴:

⁶² Hamblin does not yet call them *locution rules*.

⁶³ Hamblin, rather confusingly, calls them *syntactical rules*.

⁶⁴ To reduce the complexity, we skip S2.

S1. Each speaker contributes one locution at a time, except that a 'No commitment' locution may accompany a 'Why' one.

[This rule describes how moves in the game may be built up from locutions. It is presumed that the participants move alternately.]

S3. 'Why S?' must be followed by

(a) 'Statement $\neg S$ '

[A denial of the presupposition of the challenge.]

or (b) 'No commitment S'

[A withdrawal of the presupposition of the challenge.]

or (c) 'Statement T' where T is equivalent to S by primitive definition.

[Such an argument by primitive definition is one kind of argument that may be offered for S.]

or (d) 'Statement T, $T \rightarrow S$ ' for any T.

[*Modus ponens* is the only other kind of argument for S available within the system.]

S4. 'Statements S, T' may not be used except as in 3(d).

S5. 'Resolve S' must be followed by

(a) 'No commitment S'

or (b) 'No commitment $\neg S$ '

Finally, let us have a look at some of the commitment rules (Hamblin 1970, pp. 266–67); comment in brackets quoted from Krabbe and Walton (2011, pp. 250–251)⁶⁵:

C1. 'Statement S' places S in the speaker's commitment store except when it is already there, and in the hearer's commitment store *unless* his next locution states $\neg S$ or indicates 'No commitment' to S (with or without other statements); or, if the hearer's next locution is 'Why S?', insertion of S in the hearer's store is suspended but will take place as soon as the hearer explicitly or tacitly accepts the proffered reasons (see below).

[The principle is that who does not protest against a statement of S of the other is taken to have agreed: he gets committed to S, unless he denies or withdraws commitment or else puts out a challenge. In the latter case he may become committed to S after all, if he ever becomes committed to the premise or premises that his opponent puts forward in defence of S. This kind of suspension of commitment is here introduced only for challenges that follow upon a statement, but we think it must have been intended to hold for all challenges. Another matter is that, since premises put forward by the other in defence of S are again statements of the other, and may again be challenged (see C2 below), this suspension clause will operate in a recursive way. Thus one's opponent may have to construct a complex structure of argumentation to convince one of S. But then, if one becomes committed to the ultimate premises of such a construct,

⁶⁵ Here we skip C4.

- one also becomes committed to all the intermediate conclusions and to the final conclusion *S*. It's doubtful whether Hamblin was aware of this recursive aspect of his stipulation, since nowhere does he comment on it, even though the phenomenon can be observed in his own example (Fig. 6.8, move 16).]
- C2. 'Statements *S*, *T*' places both *S* and *T* in the speaker's and hearer's commitment stores under the same conditions as in C1.
 - C3. 'No commitment *S*, *T*, . . . , *X*' deletes from the speaker's commitment store any of *S*, *T*, . . . , *X* that are in it and are not axioms [or substitution-instances of axioms].
 - C5. 'Why *S*?' places *S* in the *hearer's* store unless it is already there or he replies 'Statement $\neg S$ ' or 'No commitment *S*'.
[Again, who does not protest agrees.]

6.6.2 An Example

To see how these rules operate, we here present a modified extract from Hamblin's example (Hamblin 1970, p. 267), adapted from Krabbe and Walton's analysis (2011, pp. 251–253). Additions to commitment stores are written to the right of the move that lets them come into effect; deletions are noted in brackets and comments (quoted from Krabbe and Walton 2011) in italics:

6.6.3 Remarks About System H and Comparison with Lorenzen-Type Systems

Considering the rules of System H and the example of a dialogue in this system given above, one may wonder what kind of dialogue or actual practice of conversation the system is supposed to model. Granted that System H is an *a priori* construct (formal₄) and that it was never intended to give an accurate description of actual conversations, it must still be recognizably relevant for some actual conversational practice in order to contribute to the study of that practice. Thus, one may ask what the system is about. Hamblin does not explicitly discuss this. In Hamblin (1971), however, he states that the systems described in that paper are "information-oriented" (p. 137) and later refers to systems that are "not strictly information-oriented" but that permit "a participant to develop an argument by securing assent to individual steps." He then refers to System H as "an alternative argument-development system using questions of the form 'Why?'" (p. 148).⁶⁶ By these lights, System H may have been intended to pertain to conversations that are somewhat information-oriented, but not exclusively, since they include argumentation used to make the other step by step accept a point of view. One consequence

⁶⁶ Cf. Walton (2007a, p. 83)

			White's commitment store	Black's commitment store
Primitive definition: $S \rightarrow T$ can everywhere be replaced by $\neg S \vee T$ and vice versa.				
Axiom: $A \rightarrow (B \vee A)$			$A \rightarrow (B \vee A)$	$A \rightarrow (B \vee A)$
Commitments obtained earlier in the dialogue \Rightarrow			$A \vee \neg A$, A [deleted at move 11], $B \vee \neg B$, B	$A \vee \neg A$, A , $B \vee \neg B$, $\neg B$ [deleted at move 26]
Moves				
1	White:	Statement B		
2	Black:	Why B?		
3	White:	Statements A, $A \rightarrow B$ <i>Argument 1: Whenever Black will become committed to A and $A \rightarrow B$, he will become committed to B.</i>	$A \rightarrow B$	
4	Black:	Why $A \rightarrow B$?		
5	White:	Statements $\neg A$, $\neg A \rightarrow (A \rightarrow B)$ <i>Argument 2</i>	$\neg A$, $\neg A \rightarrow (A \rightarrow B)$	
6	Black:	No commitment $\neg A \rightarrow (A \rightarrow B)$		$\neg A$ [deleted at move 8]
7	White:	Resolve A		
8	Black:	No commitment $\neg A$		[delete $\neg A$]
9	White:	Statement $\neg A$		
10	Black:	Resolve A		$\neg A$ <i>A resolution demand does not avert becoming committed to $\neg A$ again.</i>
11	White:	No commitment A	[delete A]	
12	Black:	Why $\neg A \rightarrow (A \rightarrow B)$?		
13	White:	Statement $\neg A \rightarrow (\neg A \vee B)$ <i>Argument 3 (based on primitive definition)</i>	$\neg A \rightarrow (\neg A \vee B)$	
14	Black:	Why $\neg A \rightarrow (\neg A \vee B)$?		
15	White:	Statements $\neg A \rightarrow (B \vee \neg A)$, $(\neg A \rightarrow (B \vee \neg A)) \rightarrow (\neg A \rightarrow (\neg A \vee B))$ <i>Argument 4 (the first premise is a substitution-instance of an axiom)</i>	$\neg A \rightarrow (B \vee \neg A)$, $(\neg A \rightarrow (B \vee \neg A)) \rightarrow$ $(\neg A \rightarrow (\neg A \vee B))$	
16	Black:	Statement C <i>Since Black doesn't deny, withdraw, or challenge a premise, he becomes all at once committed to a number of formulas on account of arguments 4, 3, 2, and 1.</i>		C , $\neg A \rightarrow (B \vee \neg A)$, $(\neg A \rightarrow (B \vee \neg A)) \rightarrow$ $(\neg A \rightarrow (\neg A \vee B))$, $\neg A \rightarrow (\neg A \vee B)$, $\neg A \rightarrow (A \rightarrow B)$, $A \rightarrow B$, B [deleted at move 22]
17	White:	No commitment C		
18		Statement C <i>Hamblin: "This can go on forever" (1970, p. 268)</i>		
19	White:	No commitment C		
20	Black:	Why B?		
21	White:	Statements B, $B \rightarrow B$ <i>Argument 5</i>	$B \rightarrow B$	
22	Black:	No commitment B Why B?		[delete B] $B \rightarrow B$
23	White:	Statements B, $B \rightarrow B$ <i>Argument 5 repeated</i> <i>Hamblin: "So can this" (ibid.)</i>		
24	Black:	Statement B		B
25	White:	Resolve B		
26	Black:	No commitment $\neg B$		[delete $\neg B$]

Fig. 6.8 Hamblin's example of a dialogue in System H (shortened)

of this unspecific nature of System H is that the system becomes more complex than systems of a Lorenzen type, i.e., those of the Erlangen School (Sect. 6.2) and those of Barth and Krabbe (Sect. 6.5). In the Lorenzen-type systems, all moves are concerned with one issue: Should the Opponent accept the thesis or not? In System H, attempts to get the other to accept a thesis may be interspersed with arguments about unrelated matters, requests for information, and *obiter dicta*.

Since Lorenzen-type systems as well as Hamblin-type systems such as System H can be seen as models of persuasion dialogue (the first wholly, and System H partly) and persuasion dialogues generally have both cooperative and competitive aspects (Krabbe 2009), one may ask how these two types of system fare in this respect. All dialectical systems assume a kind of minimal cooperativeness, since both parties agree to “play the game,” but beyond this Lorenzen-type systems seem more competitive, and System H seems more cooperative. This is so because the former systems have a concept of winning and losing and also a clear division of labor: the global roles of Proponent and Opponent, with opposing aims. It may be that ultimately both sides are committed to a common task: that of achieving a resolution of their initial difference of opinion; but as long as the dialogue runs, they are very much opposed. In System H, on the contrary, there is no such thing as winning or losing, not even an assignment of points. On the one hand then, one would say that System H is not competitive (though in some respects it must be competitive, being a model of persuasion dialogue, where one discussant tries to persuade the other), but on the other hand System H is not very cooperative either, if one thinks of how easy it is to destroy a carefully constructed argument by wanton withdrawals of commitment (as the withdrawal of B in move 22 of Fig. 6.8).

Another issue is that of symmetry. It is, however, related to that of competitiveness in so far as asymmetry enhances competitiveness. One may think that in any reasonable discussion, the same rules should hold for all, but actually the concept of equity that is implied by demanding the same rules for all participants does not apply to reasonable discussion, the role of the seller being different than that of the buyer and that of a Proponent of a thesis being different than that of its Opponent. Thus, one can have a reasonable system for the resolution of differences of opinion that is highly asymmetrical. This is illustrated by the Lorenzen-type systems and also by the pragma-dialectical model of critical discussion. System H, on the contrary, is almost completely symmetrical. The only exception to symmetry is that White begins.

Lorenzen-type systems are clearly more restrictive than System H, and even more so for *O* than for *P*. If we leave out the universal and the existential quantifier, the maximal number of options for *O* is three.⁶⁷ For *P*, there may be more options, dependent on the complexity of the situation, but the number will always be finite (presuming that we start with a finite number of formulas). In System H, however, the participants may often put forward as a statement any formula they

⁶⁷ It is three when *O* has conceded $(A \wedge B) \rightarrow C$ and *P* explores this concession by the question $(?) A \wedge B$; in that case *O* may react by conceding *C* or by challenging either with *L?* or with *R?*.

like, so the number of options can be infinite. If one looks at the rules, one sees that there are a number of postconditions for certain locutions, but hardly any preconditions.

As it is, System H seems too permissive, especially where withdrawals are concerned. How can one ever successfully argue for a thesis if the interlocutor may at any point withdraw his commitment again to some established part of the argument? This goes to show that System H needs to be supplemented by some notion of winning and losing (parts of) a dialogue.

But Hamblin did not propose System H as a fixed system to set once and for all the standard for reasonable argumentative interaction. Rather he used it as a point of departure to try out modifications and additions of rules that may solve particular problems, such as those of the fallacies of begging the question and of many questions, as well as to discuss topics such as retraction, repetitiousness, and concession (as a distinct kind of commitment). He tells us that it is not his “purpose to make a once-for-all selection” of rules and that he does “make no claim to completeness” about his discussion of possible rules. Nevertheless his system may “serve as a demonstration of how much can be achieved with comparatively meagre resources” (p. 275). As Krabbe and Walton say: “In this way formal dialectical systems function as research tools for the study of argumentation in a ‘laboratory of rules.’ Rather than as attempts to create a perfect model of argumentative discourse, the efforts of formal dialecticians should be seen as explorations in such a laboratory context” (2011, p. 257).

6.7 The Woods-Walton Approach

Hamblin’s denunciation of the treatments of fallacies in the textbooks of his time posed a challenge to theorists to provide a better account (as he himself tried to provide one by way of formal dialectic). This challenge was picked up by John Woods and Douglas Walton and led in the 1970s and 1980s of the last century to the appearance of a great number of papers in which fallacies were analyzed by the use of formal, often dialectical, methods. These papers appeared scattered in a number of journals, but an important selection of them has been collected in a single volume (Woods and Walton 1989).

The use of formal methods is characteristic of the Woods-Walton approach. According to Woods (1980; Woods and Walton 1989, Chap. 17, pp. 223–224):

Of the dozen or so fallacies that we have been studying recently there is not one case in which the investigation did not benefit from the application of formal methods. Graph theory and intuitionistic logic are, we think, helpful in modeling circularity; causal logic fixed perspectives for the *post hoc*; Hintikka’s system of dialogic gives an interesting representation of dialectical exchange; Routley’s consistent and complete system of dialectic illuminates certain features of the *ad hominem*; various constructions of erotetic logic work well for Many Questions; and so on. In our own work, we have been impressed to discover two particular advantages in the deployment of formal resources. One is the provision of clarity and power of representation and definition. The other is provision of verification *milieux* for contested claims about various fallacies.

Among the fallacies discussed by Woods and Walton, one finds besides those mentioned in the quotation (begging the question, post hoc ergo propter hoc, ad hominem, many questions) also ad verecundiam, ad baculum, ad ignorantiam, ad populum, composition and division, and equivocation. Among the formal tools they use, one finds – again besides those mentioned in the quotation – mereology, probability theory, Hintikka's epistemic logic, Hamblin's formal dialectic, Rescher's disputational dialectic, and Mackenzie's games (see Sect. 6.8).

Clearly, the Woods-Walton approach is pluralistic. Yet, to say that Woods and Walton introduce a separate formalism for each fallacy would be beside the point: they often introduce several formalisms for one fallacy or use one formalism for many different fallacies (Krabbe 1993, p. 477). Woods and Walton do not present a unified account of fallacies, but show how, in many ways, a formal approach can be useful when studying fallacies. The particular advantages mentioned at the end of the quoted passage make it clear that Woods and Walton use formal systems to contribute to conceptual clarifications and theoretical developments, the second of the kinds of use mentioned in Sect. 6.1. Woods's idea of "verification *milieux* for contested claims about various fallacies" corresponds nicely with the laboratory concept of formal dialectical systems referred to in Sect. 6.1 and again at the end of Sect. 6.6.

To illustrate Woods and Walton's approach, let us have look at one of their discussions of begging the question (Woods and Walton 1978, 1989, Chap. 10).⁶⁸ This discussion starts from a proposal by Hamblin to block circular reasoning in System H. Hamblin's proposal (Hamblin 1970, p. 271, quoted below) consists of two rules (only the second of which was announced explicitly as blocking circular argument, though one needs both). Woods and Walton called them (W) and (R1) (Woods and Walton 1978, p. 78; 1989, pp. 147–148), but here we shall use the names introduced by Walton (2007a, p. 81, where one can find more discussion of Hamblin's rule proposals):

Why-question Rule 1:

'Why S?' may not be used unless S is a commitment of the hearer and not of the speaker.

Why-question Rule 2:

The answer to 'Why S?', if it is not 'Statement $\neg S$ ' or 'No commitment S', must be in terms of statements that are already commitments of both speaker and hearer.

It may be seen that in the example of Fig. 6.8, these rules would block the circular arguments at moves 21 and 23. They also block the so-called *circle game* of Fig. 6.9 (Woods and Walton 1978, 1989).

The circle game cannot occur in a dialogue that follows the rules of System H and also the two new rules we just quoted. It cannot occur, even if we consider the circle game as a segment of a larger dialogue with other commitments than those shown, because, according to *Why-question Rule 2*, B must be a commitment of White's at Black's move 2, but according to *Why-question Rule 1*, B must not be a commitment of White's at move 3. In between no retraction took place.

⁶⁸ In our exposition we follow closely the rendering by Krabbe and Walton (2011, pp. 257–258).

Moves			White's commitment store	Black's commitment store
1	White:	Why A?		
2	Black:	Statements B, $B \rightarrow A$		A, B, $B \rightarrow A$
3	White:	Why B?	$B \rightarrow A$	
4	Black:	Statements A, $A \rightarrow B$		$A \rightarrow B$

Fig. 6.9 The circle game

			White's commitment store	Black's commitment store
Commitments obtained earlier in the dialogue \Rightarrow			$A \rightarrow B$, $B \rightarrow A$ B [deleted at move $n+5$]	$A \rightarrow B$, $B \rightarrow A$, B, A
Moves				
$n+1$	White:	Why A?		
$n+2$	Black:	Statements B, $B \rightarrow A$ <i>Argument 1</i>		
$n+3$	White:	Statement A	A	
$n+4$	Black:	Statement C		C
$n+5$	White:	No commitment B Why B?	[delete B] C	
$n+6$	Black:	Statements A, $A \rightarrow B$ <i>Argument 2</i>		
$n+7$	White:	Statement B	B	

Fig. 6.10 The Woods-Walton dialogue segment

So far so good, but then Woods and Walton (1978, 1989) came up with a segment of dialogue that abided by all these rules yet might be called circular: the so-called *Woods-Walton dialogue segment* (Fig. 6.10).

Evidently Hamblin’s rules are not sufficient to block this kind of circularity. But is this circularity fallacious? And if it is, by what viable rules could the fallacy be blocked? We shall not here answer these questions, but just note that discussion of such matters can profit from resources of formal logic and formal dialectic (Mackenzie 1979b, 1984, 1990; Woods and Walton 1982, 1989, Chap. 19).

In retrospect, Woods characterized the Woods-Walton approach (WWA) as follows:

The WWA was always conceived of as handling the analysis of various kinds of fallacious arguments or reasoning. It was a response to a particular challenge (Hamblin 1970). The challenge was that since logicians had allowed the investigation of fallacious reasoning to fall into disgraceful disarray, it was up to them to put things right. Accordingly, the WWA sought these repairs amidst the rich pluralisms of logic in the 1970s and beyond. The WWA was never intended as general theory of argument or a comprehensive articulation of informal logic. It was a dominantly logical approach to the study of fallacies, an approach that emphasized the utility of nonstandard systems of logic, including dialogue logic. Neither was it supposed by the WWA that fallacies were intrinsically dialogical, as is now supposed by Douglas Walton in company with the pragma-dialecticians of the Amsterdam School. Nor was the WWA much interested in finding a unified theoretical structure within which everything bearing the name of fallacy would have a well-elucidated

home. This was not a decision borne by failed attempts at federal amity, but rather one that grew out of the conviction that any such unification was destined to end up as theoretically thin. (Woods 2004, pp. xiii–xiv)

Woods continued his research on fallacies and related matters, taking much the same approach. A record of this research was published as his 2004 book, which may be seen as a sequel to the Woods and Walton volume of 1989.⁶⁹

6.8 Mackenzie's Systems

Circularity was just one of the subjects discussed by Mackenzie, who following Hamblin's approach wrote a number of papers on formal dialectic dealing with a number of issues and problems (e.g., 1979a, b, 1984, 1985, 1988, 1989, 1990). Four of his systems are formulated and briefly described in his paper "Four dialogue systems" (Mackenzie 1990). The first system deals with two kinds of inconsistency, the second with circularity, the third with conversational implicatures, and the fourth with equivocation. By way of example, we shall here briefly comment on these systems.

We saw that in System H, a participant can use a resolution demand "Resolve S" to point out an inconsistency (commitment to both S and $\neg S$) of his interlocutor, who should then withdraw either S or $\neg S$. Mackenzie wants to provide dialogical means for the participants to require from one another a minimal kind of consistency but one that involves more than avoiding commitment to a pair of contradictions. One can, of course, not simply impose consistency, since the latter is an undecidable concept (for a rich enough language).⁷⁰ Also commitment to an inconsistent set of statements (logical inconsistency) is not the only kind of inconsistency that needs to be dealt with. According to Mackenzie, one is also being inconsistent (be it in a different way) if one refuses to accept the deductive consequences of one's commitments. This we may call *consequential inconsistency*. A notorious example of consequentially inconsistent behavior is that of the tortoise in Lewis Carroll's story (1894).⁷¹ Again, it would not do to simply require consequential consistency.⁷² But one may provide dialogical means for the participants to deal with consequential inconsistency in certain simple cases.

To describe minimal consistency, we are to suppose that a list of syntactically recognizable valid argument patterns (schemata), such as *modus ponens*, has been given. For each argument that is a substitution instance of any of these patterns, the

⁶⁹ See also Gabbay and Woods (2001).

⁷⁰ For rich languages, such as that of first-order predicate logic, there are no possible computational means to let us decide, for arbitrary finite sets of sentences, whether they are consistent or not.

⁷¹ The tortoise admits B and $B \rightarrow A$ but will not concede B without another premise: $(B \wedge (B \rightarrow A)) \rightarrow A$. Once Achilles has registered this premise, the tortoise admits it but asks for yet another one: $(B \wedge (B \rightarrow A) \wedge ((B \wedge (B \rightarrow A)) \rightarrow A)) \rightarrow A$, and so on and so forth.

⁷² For rich languages, the question whether an arbitrary argument formulated in the language is deductively valid is also undecidable.

Type of move	Notation	Analogue in System H	Preconditions	Effects on commitment stores	Next move
Statement	s	Statement S		s is added to both stores	
Question	$Q's$	Question S, $\neg S$?			s , $\neg s$, or $W's$
Withdrawal	$W's$	No commitment S		s is deleted from the speaker's store	
Resolution demand of logical inconsistency with respect to a set T	$R'T$	Resolve S	T must be an immediately inconsistent subset of the hearer's commitment store		$W's$, for some s in T
Resolution demand of consequential inconsistency with respect to a consecution T/s (with premises T and conclusion s)	$R'T/s$		Preceding move must have withdrawn s , whereas T must be a subset of the hearer's commitment store of which s is an immediate consequence		s or $W't$ for some t in T

Fig. 6.11 Mackenzie's System one

conclusion is said to be an *immediate consequence* of the premises. The associated conditionals of these arguments⁷³ are called *logician's conditionals*. A set of statements is said to be *immediately inconsistent* if the denial of one of the statements in the set is an immediate consequence of the other statements in the set.

The simple cases of consequential inconsistency that can be dealt with in Mackenzie's *System one*⁷⁴ are precisely those where an interlocutor denies – or withdraws commitment to – an immediate consequence of premises to which he is committed. The cases of logical inconsistency that can be dealt with are those where a subset of the set of commitments of the interlocutor is immediately inconsistent. Logician's conditionals function as do the axioms in System H: they are unassailable. Types of moves and rules for these moves that have the desired effects are assembled in Fig. 6.11.

In System one it is not so easy to have an immediately inconsistent subset as part of one's commitment store or to withdraw commitment to an immediate consequence of part of one's store. In both cases one may be confronted by a resolution demand (which according to the preconditions must be relevant). Immediately upon having been confronted in that way, one is to make amendments, either by withdrawal or by making a statement. Thus, System one succeeds in modeling an important norm of “minimal consistency, which is plausibly a necessary condition

⁷³ The associated conditional of an argument is the conditional statement with the conjunction of the argument's premises as its antecedent and the argument's conclusion as its consequent.

⁷⁴ For a fuller motivation of a system like System one, see Mackenzie (1979a).

Type of move	Notation	Analogue in System H	Preconditions	Effects on commitment stores	Next move
Challenge	$Y's$	Why S?		$Y's$ is added to the speakers store; s is added to the listener's store and deleted from the speaker's store	$W's$ or a resolution demand $R'T/s$ or a ground $G't$ where t and $t \rightarrow s$ must be acceptable for the challenger
Ground	$G't$	Statements T, $T \rightarrow S$	Preceding move is $Y's$	t and $t \rightarrow s$ are added to both commitment stores	

Fig. 6.12 Additions for Mackenzie's System two (A challenge $Y's$ involves a withdrawal of s and may be followed by a resolution demand of a consequential inconsistency. The Ground move of System two differs from the analogue in System H in that t and $t \rightarrow s$ are added to the commitment store of the participant who uttered the challenge $Y's$ but s is not, not even at the next turn. However, if the challenger were to withdraw s , he will be liable to a resolution demand.)

for a language game which permits argument and reasoning" (Mackenzie 1990, p. 567).

In our view, the system could even be improved if the urgency to maintain consistency were strengthened by introducing some kind of winning and losing.⁷⁵ It can also be improved by adding some rules to make commitments stick. For with the present rules, it is very easy to withdraw a commitment, even if it was forced on someone by a resolution demand. Consequently, it will be nearly impossible to establish a chain of reasoning vis-à-vis a reluctant opponent.⁷⁶ Thirdly, if symmetry (equal rights for both parties) is to be maintained, it would be better to allow more than one locution in each move, for instance, a statement together with a question.⁷⁷ For even though the rules have been formulated symmetrically, they still allow either participant to foist the role of an Answerer upon the other. A participant may do so by asking a question and then continue to ask questions, no matter what the reply contains. The rule that questions must be answered at the next turn has this effect.

System two is an extension of System one by two new types of move as displayed in Fig. 6.12.

In System two the moves of challenge (requesting an argument) and of providing a ground or reason considerably increase the possibilities to model argumentation.

⁷⁵ Mackenzie says that there is no such thing as winning in his dialogues (1990, p. 567). One may wonder whether winning and losing ought to be wholly absent from a system that cares about consistency, even if it be only minimal consistency. Perhaps being confronted by a resolution demand must be conceived as losing some points. For, unless being confronted by resolution demands constitutes an evil that one wishes to avoid, one may not care about maintaining minimal consistency.

⁷⁶ Even an argument starting from logician's conditionals can be frustrated if it involves more than one immediate consequence, but admittedly the participants are not supposed to be concerned with proving theorems of logic (Mackenzie 1990, p. 567).

⁷⁷ In contrast to Lorenzen's systems, Mackenzie's systems are meant to be symmetrical (Mackenzie 1990, p. 568).

			White's commitment store	Black's commitment store
1.	White:	$Y's$	$Y's$	s
2.	Black:	$G't$	t $t \rightarrow s$	t $t \rightarrow s$
3.	White:	$Y'r$	$Y'r$	r
4.	Black:	$G's$	s $s \rightarrow r$	$s \rightarrow r$

Fig. 6.13 A legal dialogue in System two that would be blocked if clause (2) in the definition of acceptability were omitted

Since the grounds that are provided for a challenged statement may themselves be challenged, the system admits of a complex kind of argumentation. But whether the argumentation be simple or complex, the problem of begging the question has to be dealt with: How can question-begging arguments be avoided? The solution incorporated in System two is that, whenever a challenge $Y's$ is answered by a ground $G't$, the statements t and $t \rightarrow s$ must be acceptable to the challenger. Acceptability is defined as follows: at a certain point in the dialogue, a statement s is acceptable to a participant P ,⁷⁸ just in case either (1) there is no challenge of s in P 's commitment store or (2) there is a set T of statements in P 's commitment store such that (2.1) their challenges are not in P 's commitment store and (2.2) s can be derived from T by one or more applications of the rule of modus ponens.

Notice that it would be too much to simply require that t and $t \rightarrow s$ be unchallenged, for such a stipulation would rule out perfectly acceptable dialogues as the one in Fig. 6.13.⁷⁹

In move 4 of Fig. 6.13, B uses the challenged statement s to defend r . This should not count as a fallacy of begging the question since s is a consequence (by modus ponens) of $t \rightarrow s$ and t , both of which are commitments of White's.

On the other hand, the circle game is blocked in Mackenzie's System two, as shown in Fig. 6.14.

Move 4 in Fig. 6.14 is illegal, because s is under challenge and is not derivable by modus ponens from statements in White's commitment store. The move would have been equally illegal if White had challenged $t \rightarrow s$ instead of t in move 3. The question begging of the Woods-Walton segment is also ruled out, as shown by Fig. 6.15, which as closely as possible reconstructs this segment in System two.

⁷⁸ Mackenzie (1990, p. 573) actually defines acceptability with respect to a set of locutions, but the notion is always applied such that this set of locutions coincides with a particular participant's commitment store. For a fuller account of the idea behind acceptability, see Mackenzie (1984).

⁷⁹ In the example dialogues that follow, r , s , and t are supposed to represent elementary statements.

			White's commitment store	Black's commitment store
1.	White:	$Y's$	$Y's$	s
2.	Black:	$G't$	t [deleted at move 3] $t \rightarrow s$	t $t \rightarrow s$
3.	White:	$Y't$	$Y't$ [delete t]	
4.	Black:	$G's$ ILLEGAL		

Fig. 6.14 The circle game is blocked in System two

			White's commitment store	Black's commitment store
Commitments obtained earlier in the dialogue \Rightarrow			$s \rightarrow t, t \rightarrow s$ t [deleted at move $n+5$]	$s \rightarrow t, t \rightarrow s, t, s$
Moves				
1	White:	$Y's$	$Y's$	
2	Black:	$G't$		
3	White:	s	s	
4	Black:	r	r	r
5	White:	$Y't$	$Y't$ [delete t]	
6	Black:	$G's$ ILLEGAL		

Fig. 6.15 The Woods-Walton dialogue segment in System two

Move 6 in Fig. 6.15 is illegal because s is under challenge and not derivable by modus ponens from the unchallenged statements in White's commitment store: $s \rightarrow t, t \rightarrow s$, and r .

We shall be briefer about the other two systems in Mackenzie's (1990) paper. *System three* introduces an additional kind of commitment and a corresponding commitment store (called *the balk*) for each participant (1990, p. 577). If a speaker utters a cautious assertion, such as "I guess that s " (called a *hunch* and formalized as $H's$), the statement s is placed in his balk. As long as it stays there, it will be illegal for him to put forward an unqualified statement of s . Moreover, the speaker cannot himself remove s from his balk. Only his interlocutor can do so: by asserting s (either by putting forward the unqualified statement of s or by using s as an explicit or implicit premise when providing grounds). Thus, it will be risky to restrict oneself misleadingly to a mere hunch when one is actually in the position to make an unqualified statement. Mackenzie describes the purpose of this system as follows⁸⁰:

The purpose of System Three is to provide a framework within which these relations of misleading and puzzling weakness can be formalised without appeal to such psychologistic notions as 'intentions' or 'conversational implicature,' since psychologism should play no part in logic. The misleadingness of an utterance is as objective a matter as the validity of an argument. (1990, p. 576)

⁸⁰ For a more detailed discussion of System three, see also Mackenzie (1987).

In his *System four*, Mackenzie, inspired by Hamblin (1970, Chap. 9), deals with problems of equivocation. He boldly drops the principle, common to most logical or dialectical systems, that meanings are constant and expressions unambiguous. System four provides for a move of making a distinction between several meanings of a term, which can be used in response to a resolution demand of either kind (besides the other responses provided in System one)⁸¹:

A distinction specifies a triple: first, the expression on which the equivocation is being said to occur; second, the two or more *meanings* or senses which that expression is being said to have; and third, a *many-valued function* which adjusts existing commitments in the appropriate manner. Intuitively, what a distinction does is to take occurrences of the expression in locutions in the participants' commitment stores, and assign those occurrences to indexed divisions ("meanings"), replacing each occurrence by an indexed version of the expression.⁸² It is important to note that the assignment made by a distinction is *not* a mapping by a theorist of dialogue into an alternative language; it is an action by a *participant* to extend or *change* the very language in which the dialogue is conducted. (1990, pp. 579–580; italics as quoted)

One important rule of System four stipulates that after a distinction has been drawn, the unqualified version of the disambiguated term is no longer available for use, i.e., in the remainder of the discussion, each occurrence of the term must be indexed.

The idea of having a formal dialectical system that provides means for the discussants to deal themselves with problems of ambiguity was taken up by van Laar (2003a). In van Laar's *Ambiguity dialectic*, it is possible to propose disambiguations as well as to criticize them as irrelevant for the discussion or as inadmissible from a linguistic point of view. His system deals not only with reactions to resolution demands but also with fallacies of equivocation and with misunderstandings.

6.9 Walton and Krabbe's Integrated System

Among the formal dialectical approaches discussed in this chapter, the Lorenzen-type systems (in Sects. 6.2 and 6.5) and the Hamblin-type systems (in Sects. 6.6, 6.7, and 6.8) stand apart on many counts (see also Sect. 6.6.3). For one thing, the Lorenzen-type systems are purely argumentative by being focused on criticism and defense of a thesis, whereas the Hamblin-type systems admit of other purposes such as the exchange of information. Generally, the former systems are more restrictive in the options they present to the discussants, whereas the latter are more permissive, allowing the participants to freely put forward any statements, arguments, questions, or challenges they like. Also, in Lorenzen-type systems it is not easy or

⁸¹ For a fuller discussion of the distinction locution, see also Mackenzie (1988, 2007). For a critical assessment of System four, see van Laar (2003a, pp.105–110).

⁸² Compare the way in which different senses of formal were distinguished by indices (formal₁, formal₂, etc.) in the introduction to this chapter.

even not permitted to retract one's commitment to a statement, whereas in a Hamblin-type system, this is easily done by a noncommitment or withdrawal move. The ideas of winning and losing are central in Lorenzen-type systems but absent from the Hamblin-type systems. Generally the former are more competitive and the latter more cooperative. Lorenzen-type systems are asymmetric in the sense that the rights and duties of the Proponent are markedly different from those of the Opponent, whereas in Hamblin-type systems, one strives for symmetry by giving both discussants maximally equal rights.

But though these two types of system are very different, both can be useful for providing models of argumentative discussions. This is so because argumentative discussions differ among themselves in their degree of permissiveness:

In most instances of critical discussion of an issue in everyday conversation, the dialogue is quite loose and forgiving in nature. If somebody wants to change his mind, that is not a problem, unless perhaps the retraction conflicts with his fundamental convictions or basic position expressed earlier in the argument. However, in other contexts, an argument can become much more "hard-nosed" and "legalistic" – participants will define their terms very carefully and insist on strict consistency. In this type of "tightened up" case, retraction will be much more difficult, perhaps even impossible without losing the argument altogether. (Walton and Krabbe 1995, p. 10)

In their analysis of the problem of retraction, i.e., what the rules of retraction should be and whether they should be lenient or strict, Douglas Walton and Erik Krabbe take into account both types of context and discussion, as well as the possibility of shifting from one type to the other. To model the more relaxed type of argumentative discussion, they develop a species of Hamblin-type system they call *Permissive persuasion dialogue* (PPD). PPD, however, differs from the systems of Hamblin and Mackenzie described above in a number of respects. For instance, in PPD each move can contain a variety of locutions instead of just one or two.⁸³ Further, three kinds of commitment are distinguished: *commitment to concessions* (carrying no burden of proof), *commitment to assertions* (which do carry a burden of proof), and *dark-side commitments*, i.e., commitments to principles that may be unexpressed but which if they come to light must be conceded. Also, the rules are somewhat stricter than in the other Hamblin-type systems: there are a number of rules that try to assure that each contribution to the dialogue is to the point and there are also proposals that tend to make retraction more difficult.⁸⁴ Finally, PPD is more

⁸³ In System H a "no commitment" locution may accompany a "why" locution, but otherwise each move contains just one locution. As we saw, this feature of Mackenzie's System one made it possible to spoil the symmetry by foisting a role on the other party.

⁸⁴ One rule stipulates that whoever retracts the conclusion of an argument presented by her interlocutor must retract also one of the premises, and so on, so that one retraction may entail many other ones (external stability adjustment); another rule stipulates that whoever retracts some statement *S* that (also) occurs in one of one's own arguments must retract all statements that only served to establish *S* (internal stability adjustment). These rules were incorporated in the system PPD₀, the only extant example of a PPD system (Walton and Krabbe 1995, pp. 147–154).

competitive: its clear focus on argumentation allows one to introduce a kind of winning and losing (1995, pp. 133–149).⁸⁵

To model the stricter type of argumentative discussion Walton and Krabbe define a species of Lorenzen-type systems they call *Rigorous persuasion dialogue* (RPD). In RPD there is only one thesis that is being discussed and there is an asymmetry of roles, since the rights and duties of the Proponent differ from those of the Opponent.

The PPD and RPD systems are not competitors, since they model different kinds of dialogue. They can, moreover, be brought together even more closely. For in a relaxed, PPD-like dialogue, a shift may occur that makes the dialogue change into a more RPD-like dialogue. This shift need not be fallacious. On the contrary, the rigorous dialogue may very well have a function in getting the PPD-like dialogue to achieve its ends.⁸⁶ Typically, in a situation where one participant in an ongoing PPD-like dialogue “challenges or retracts (or at least refuses explicitly to concede) a proposition that the other participant suspects she should be committed to in virtue of other overt commitments,” such a shift could be beneficial (1995, p. 172). But, of course, after the rigorous dialogue has done its work and the contested proposition has been either accepted or discarded, the discussants should return to the original PPD-like dialogue taking into account the outcome of the rigorous interlude. When a shift from one type of dialogue to another one is legitimate because there is such a functional relationship, Walton and Krabbe say that the latter dialogue is *embedded* in the former (1995, p. 102). To model this procedure, Walton and Krabbe describe the rules for embedding of RPD in PPD (1995, pp. 163–166, rendered here in a slightly adapted version):

- (E1) Whenever proposition *T* is not a concession of participant *X*, and either there was a withdrawal or challenge of *T* by this participant, the other participant, *Y*, may demand (provided it is *Y*'s turn to move) an RPD on the issue of *T*, using the locution “Your position implies *T*.” The current PPD is then interrupted to have this RPD interlude.
- (E2) The initial situation from which the RPD starts is determined by collecting the concessions granted by *X* thus far in the current PPD: these make up the initial concessions. *T* is to be the initial thesis. *X* takes the role of Opponent, *Y* that of Proponent.
- (E3) After either participant has won the RPD, the PPD procedure is resumed. If *X* won the RPD, *Y* has now to make a move according to the rules of PPD. If *Y* won the RPD, *X* must first concede *T* in the resumed PPD, before *Y* is to make a move.

⁸⁵ Winning and losing are indeed introduced in PPD₀ but only with respect to a specific initial thesis (assertion) *P*. Also, it is not excluded that one interlocutor both loses and wins with respect to *P* (if that interlocutor retracts *P*, while the other interlocutor concedes it).

⁸⁶ Besides the goal of resolving the initial differences of opinion, a PPD-like dialogue has also maieutic ends (bringing to light the actual positions).

(E4) If Y won the RPD, X will not be allowed to retract commitment to T unless she also retracts commitment to at least one of the initial or voluntarily granted concessions actually used by Y in the RPD.

(E5) X 's concessions in the RPD are transferred to the resumed PPD.

Walton and Krabbe also sketch an example of a system incorporating this embedding procedure: a complex PPD system they call PPD₁.

6.10 Profiles of Dialogue

To conclude this chapter, we shall describe a link between the formal and the informal approaches to argumentation. As much of the literature shows, the use of a formal approach in the theory of argumentation does not always amount to a complete specification or formalization of a model. For instance, for the specification of a propositional logic, it is often deemed not so important to make a choice for a particular set of elementary sentences, though a particular set may be chosen by way of example. Similarly, in the case of formal dialectic, often parts of the model are left unspecified. In artificial intelligence not many papers end with full instructions for the implementation of the systems of reasoning or communication they discuss. Thus, what is here described as a formal approach to argumentation theory often consists of a semiformal specification of certain features of a formal model, rather than of the model itself. This may be an advantage, not only because often further specification is unnecessary, but also because it increases the ease of experimenting with various setups.

One semiformal method that is particularly useful in argumentation theory is the method of *profiles of dialogue*. A profile of dialogue is typically written as a tree diagram consisting of nodes linked by line segments. The tree is usually displayed upside down; even so the top node is then called the “root.” Nodes are associated with moves in a dialogue so that the root corresponds to the initial move. The links between the nodes correspond to situations in the dialogue. (But sometimes it is the other way round: nodes representing situations and links representing moves.) Each branch of the tree displays a possible dialogue as it may develop from the initial move.⁸⁷

An actual dialogue is described by a tree consisting of just one branch. A tree of possible dialogues that, given certain constraints, can be realized starting from a given initial move would usually have several branches. If the constraints define an existing social practice, the profile of dialogue will be descriptive of that practice

⁸⁷ Walton was probably the first to use profiles of dialogues and to call them by that name. He did so in his discussions of the fallacy of many questions (Walton 1989a, pp. 37–38; 1989b, pp. 68–69). Some other instances of their use are Krabbe (1992 [ignoratio elenchi], 1995 [ad ignorantiam], 1996 [non sequitur], 2001 [problem of retraction], 2002 [equivocation], 2003 [deductive arguments]), Krabbe and van Laar (2013 [criticism]), van Laar (2003a, Chap. 7 [ambiguity]; 2003b), and Walton (1996, pp. 150–154 [ad ignorantiam]; 1997, pp. 253–255 [ad verecundiam]; 1999 [ad ignorantiam]). For dialectical profiles, see also van Eemeren et al. (2007, esp. Sect. 2.3).

(which may be good or bad, rational or irrational); if they define a normative system (according to some ideal of what is good or rational), the profile will be normative.

Thus, profiles of dialogue can be descriptive or normative; they can also be either concrete or abstract. In a concrete profile, there occur sentences of ordinary language, for instance, “Why can we not go there?” In an abstract version, these are replaced by formal sentences: “Why *P*?”

According to Krabbe (2002, pp. 154–155), profiles may be used for analysis and evaluation of concrete dialogues as well as for theoretical purposes. For the purpose of analyzing and evaluating a dialogue or a part of a dialogue, one first describes the dialogue as it has occurred. This yields a single branch profile that is both descriptive (empirical) and concrete (van Laar 2003b). Next, one turns to an abstract normative profile of dialogue for the kind of initial situation one is dealing with (if such a profile is available) and checks whether the single branch profile coincides with a substitution instance of one of the branches of the normative profile. If so, the dialogue stands approved; if not, one has spotted a fallacy. If there is no normative profile available, one may still scrutinize the abstract version of the single branch profile to see whether it constitutes an acceptable format. For theoretical purposes profiles of dialogue can be used in a laboratory of rules (see Sect. 6.6) as a heuristic device and a stepping-stone toward the definition of a formal dialectical system. In this context, profiles are considered as attempted partial descriptions – that may still have to undergo many alterations – of a dialectical model.

The method of profiles of dialogue inspired the use of *dialectical profiles* in pragma-dialectics. The latter notion is “based on the concept of critical discussion and purely normative from the outset. A dialectical profile is defined as a sequential pattern of the moves the participants in a critical discussion are entitled to make – and in one way or another have to make – to realize a particular dialectical aim at a particular stage or sub-stage of the resolution process” (van Eemeren 2010, p. 98). Thus, it appears that the method of profiles of dialogues is located at the very borderline of formal and informal approaches to argumentation.

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7.1 Conceptions of Informal Logic

In the late 1970s, in North America, a group of philosophers who call themselves *informal logicians* started a movement toward the normative study of argument from a point of view different from that of formal logicians. Although there were some precursors to the informal logic movement, the formative works on the subject were published by Michael Scriven, Trudy Govier, David Hitchcock, Perry Weddle (1939–2006), John Woods, Ralph H. Johnson, and J. Anthony Blair. Of these scholars, Johnson and Blair at the University of Windsor in Canada contributed the institutional conditions for the establishment of informal logic as a field of research: an early conference in 1978, a newsletter, a second conference, a journal, and a third conference.

In an overview article published in 2000, Johnson and Blair give the following definition of informal logic: “Informal logic designates that branch of logic whose task is to develop non-formal₂ standards, criteria, procedures for the analysis,

interpretation, evaluation, critique and construction of argumentation in everyday language” (p. 94). By using the term non-formal₂, borrowed from Barth and Krabbe’s (1982) distinction between three different senses of *form* (see Sect. 6.1 of this volume), Johnson and Blair want to make clear that being nonformal does not mean that informal logic does not make use of any standards, criteria, or procedures:

We want to emphasize that informal logic is in no way incompatible with procedures, the application of criteria, or rigour. It is a question of which criteria, and here informal logic is informal because it rejects the logicist view that logical form (à la Russell) holds the key to understanding the structure of all arguments; and also the view that validity is an appropriate standard to demand of all arguments. (2000, p. 102).

Although Johnson and Blair’s conception of informal logic is more or less shared by most informal logicians, it is not universally agreed upon.¹ Some informal logicians have a different, in some cases broader or more limited, conception of informal logic.² Others understand informal logic simply as the nonformal treatment of elementary deductive logic, without the use of any formal or symbolic apparatus. For the purposes of this chapter, we shall take Johnson and Blair’s definition of informal logic as our starting point.

The term *informal logic* does not refer to one well-delineated approach. It rather refers to a collection of attempts to develop and theoretically justify a method for the analysis and evaluation of natural language arguments in different contexts of use that is an alternative to formal logic. For this reason, the best way of characterizing the informal logic movement is in our opinion to discuss the various contributions made by the most prominent informal logicians and scholars closely associated with informal logic to the development of this branch of argumentation theory.

First, in Sect. 7.2, we shall give a brief characterization of the informal logic movement by sketching its historical background and providing an overview of the main issues that have been the subject of investigation. Then, in the remaining sections of the chapter, we shall discuss the major contributions of the leading exponents of informal logic.

In Sect. 7.3, we shall discuss some important theoretical insights put forward in publications by Johnson and Blair. Among the publications that serve as our sources is Johnson and Blair’s (2006) influential textbook *Logical Self-Defense* first published in 1977, in which they introduce three criteria for the (logical) evaluation of arguments. Another important point of reference is Johnson’s (2000)

¹ Ryle (1954), for instance, uses the term *informal logic* to refer to the implications of substantive concepts (such as *time*) whose logic is “informal.” Johnson and Blair (2000) provide an overview of what they regard as the most important misconceptions and competing conceptions of informal logic.

² Due to the fact that applied informal logic is frequently used in teaching critical thinking skills, informal logic is often identified with critical thinking. *Informal logic* is also used as a general label for the study of the *informal* fallacies (Carney and Sheer 1964; Kahane 1971).

Manifest Rationality, in which the additional dialectical criterion is introduced that an arguer should deal with objections in order for his argument to be rationally persuasive.

In [Sect. 7.4](#), we describe the main characteristics of Maurice Finocchiaro's historical and empirical approach to arguments. Finocchiaro is one of the first scholars to analyze and evaluate real cases of natural argument from an informal logic point of view. More in particular, he provided extensive analyses of scientific controversies, especially those surrounding Galileo Galilei's defense of the world-view of Copernicus. In our discussion of Finocchiaro's work, we shall concentrate on his theoretical reflections concerning the method used in analyzing such scientific controversies.

In 1987, Trudy Govier published *Problems in Argument Analysis and Evaluation*, an important book in which she explores a number of theoretical key issues arising from the nonformal approach to the analysis and evaluation of arguments in natural language. Govier attempts to spell out the theoretical implications of the various practical guidelines informal logicians provide in their textbooks. In [Sect. 7.5](#), we shall discuss Govier's view on the differences between formal and informal logic as well as her critical analysis of some of the key issues in informal logic: argument types, implicit premises, and fallacies.

Some authors who consider themselves informal logicians favor an epistemological approach or even equate informal logic with applied epistemology. Most prominent among them are Mark Battersby, Mark Weinstein, John Biro and Harvey Siegel, Robert Pinto, Christoph Lumer, and, on the basis of part of his work, James Freeman. In [Sect. 7.6](#), we shall give an exposition of the general starting point of such epistemological approaches to informal logic, discuss the various types of criteria for good argument that are proposed, describe the general characteristics of an epistemological theory of fallacies, and provide a short overview of Pinto's influential approach.

One of the issues much discussed in informal logic is how to analyze and diagram the structure of complex arguments. An important contribution to this discussion is James Freeman's *Dialectics and the Macrostructure of Arguments* (1991), which combines a revised version of the Toulmin model with a dialectical perspective. In 2011, Freeman published a second monograph on the subject, *Argument Structure: Representation and Theory*. In [Sect. 7.7](#), we shall give a characterization of his approach to "argument structure," followed by a discussion of his work on argument acceptability, especially as treated in the monograph *Acceptable Premises: An Epistemic Approach to an Informal Logic Problem* (2005a).

In the late 1980s and early 1990s, Douglas Walton, one of the most prolific argumentation theorists associated with informal logic, together with Erik C. W. Krabbe, developed a theory centering around "dialogue types" (Walton and Krabbe 1995) that he later called the *new dialectic*. In this approach, dialogues are conceived as conventionalized joint activities between two discussants that can be characterized by the specific type of commitments, starting points, and dialogical goal involved. Fallacies may occur when there is a shift from one dialogue type to another. We shall discuss Walton's dialogue theory in [Sect. 7.8](#). Also in that

section, we discuss Walton's work on everyday patterns of argument. These argument schemes often take the form of semiformal rules of inference and have associated critical questions.

We conclude the chapter with a discussion of some other important contributions to informal logic. In [Sect. 7.9](#), we shall provide a characterization of Hans Hansen's contributions to fallacy theory and the development of informal logic. Then we describe David Hitchcock's work on informal logic, "warrant," and good reasoning in [Sect. 7.10](#). Finally, in [Sect. 7.11](#), we shall discuss Christopher Tindale's somewhat deviant rhetorical approach to argumentation.

7.2 The Informal Logic Movement

The current characteristics of informal logic can be explained to a large extent by the way in which the informal logic movement developed. We therefore start our discussion of informal logic with a sketch of its history. Our historical outline is largely based on the various publications the founding fathers of informal logic, Johnson and Blair, devoted to its development and the resulting characteristics.³

Informal logic developed in the 1970s as an educational reform movement that grew out of dissatisfaction with the introductory courses and textbooks used in the 1950s and 1960s to teach undergraduate students how to analyze and evaluate arguments in everyday public discourse. The philosophers who started the reform movement, some of them logicians themselves, did no longer consider formal deductive logic to be the right instrument for this purpose. As an alternative to the criticized introductory formal logic textbooks, several instructors had already developed their own textbooks for teaching undergraduate courses in analyzing and evaluating arguments.⁴ According to Blair, the pedagogical origins of the movement make clear why informal logic is not a theory:

The term, 'informal logic' does not name a theory. It was the name that began to be used, in the late 1970s, for a range of curriculum innovations developed for university courses or classes designed to teach students critical thinking skills (by teaching skill in the management of arguments) that started several years earlier, at the beginning of the 1970s, and that saw the light of day in textbooks. (2011b, p. 5).

At the beginning, the term *informal logic* was primarily used as a means of declaring informal logic a distinct approach to argument analysis and evaluation,

³ From the start of the informal logic movement, Johnson and Blair, together as well as individually, have published papers in which they outline informal logic's development (Blair and Johnson 1987; Johnson and Blair 2000; Blair 2009, 2011b; Johnson 2006).

⁴ Three textbooks spearheaded the development of informal logic: *Logic and Contemporary Rhetoric: The Use of Reason in Everyday Life* by Kahane (1st ed., 1971), *Practical Reasoning in Natural Language* by Thomas (1st ed., 1973), and *Reasoning* by Scriven (1976).

independent from formal logic, hence the inclusion of the negating *in-* in the naming. Blair says that the name – mainly chosen for the purpose of distancing the approach from formal logic – explains why informal logic is not one consistent theory:

In my view it is significant that ‘informal logic’ was adopted as the name of a critique of certain applications of formal logic. It was not the name of a new theory or approach to the analysis and assessment of arguments except insofar as it identified such a theory or approach negatively – in terms of what it was not. As a result, a variety of tools and criteria have clustered under the rubric of ‘informal logic’ that are not necessarily consistent and are often redundant (that is, they performed the same role in different ways). (2009, p. 50).

In a similar vein, Johnson (2006) makes the following observation about the informal logic approach: “Because it clearly refers to a variety of quite different approaches, the term cannot be said to designate anything like a school” (p. 246). Another reason for the heterogeneity of conceptions of informal logic is, according to Johnson (2006), that practice gave rise to theory, so that “how one would conceive of informal logic depended to some degree on which aspect of argumentative practice the individual author thought required attention” (p. 250).

The informal logic movement was preceded by the appearance of a number of introductory logic textbooks that rejected formal logic as an appropriate tool for the analysis and evaluation of natural language arguments. Informal logic began to be recognized as a separate subfield of philosophy when the first international symposium on informal logic, organized by Blair and Johnson, took place at the University of Windsor, Ontario, in 1978. Then, Blair and Johnson started *The Informal Logic Newsletter*, which became in 1983 the refereed journal *Informal Logic*.

The main reason why informal logicians concluded that formal logic was not an appropriate model for the evaluation of argumentation was that they considered the formal deductive logical account according to which the criterion for a good argument is soundness – i.e., the requirement that the argument should be valid and have true premises – as problematic for the evaluation of real-life arguments. According to informal logicians, deductive validity is neither a necessary nor a sufficient criterion for a cogent argument, and in the case of everyday arguments, the truth of the premises one is dealing with is often not known. In expressing these criticisms, the informal logicians were drawing attention to the same kind of problems as Toulmin in 1958 pointed out in *The Uses of Argument* (Toulmin 2003) and also Perelman and Olbrechts-Tyteca in 1958 in the new rhetoric (Perelman and Olbrechts-Tyteca 1969):

Work in informal logic can be seen as an attempt to reconceptualize argumentation and free it from its historical attachment to what Toulmin and Perelman called the geometrical or mathematical model. This means, among other things, the end of deductivism – the idea that all implications are either deductive or defective; the end of the notion that argument should be conceived as proof; and the end of the class divisions between types of beliefs – elite beliefs being either necessary truths or truths that follow necessarily from premises known to be true, while second best are beliefs warranted by some probability calculus and all the rest are untouchable, not warranting acceptance by a reasonable person. (Johnson and Blair 2000, pp. 101–102).

Because of their dissatisfaction with the standards of good argument used in formal logic, it became the informal logicians' aim to develop alternative standards for the evaluation of arguments. The early textbooks published by informal logicians, such as Johnson and Blair's (1977) *Logical Self-Defense* were written to this end. Another distinctive feature of these textbooks was that the artificial examples customary in the introductory logic texts were in the informal logic textbooks replaced by natural examples taken from sources such as newspapers, advertisements, and political campaigns.

More theoretically oriented informal logic publications started appearing from 1979 onward. They are devoted to the analysis and systematization of the concepts and principles used in argument interpretation and evaluation. Among the most influential examples of such publications are Govier's (1987) *Problems in Argument Analysis and Evaluation*, Blair and Johnson's (1987) "Argumentation as Dialectical," Walton's (1989) *Informal Logic*, Freeman's (1991) *Dialectics and the Macrostructure of Argument*, Hansen and Pinto's (Eds., 1995) *Fallacies*, and Johnson's (2000) *Manifest Rationality*.⁵

In the 1980s, the informal logic movement became strongly associated with the *critical thinking* movement.⁶ Critical thinking had emerged in the 1970s as part of a more general educational reform movement in certain parts of the United States.⁷ Its objective was the development of a reflective, critical attitude of mind among students. Unlike informal logic, critical thinking refers to a complex of advanced skills, rather than a particular discipline, but there has nevertheless been a tendency to treat the terms *critical thinking* and *informal logic* as coextensive. This is because the perspective and the methods of informal logic were – and are – among the tools used to achieve the goals of critical thinking. However, as Govier (1987) has argued, critical thinking has a wider scope: One can think critically about all sorts of things, not just arguments, and the product of a person's critical scrutiny is not always an argument.⁸

In the middle of the 1980s, the influence on informal logic of other approaches than formal logic becomes apparent, also from outside North America, such as in particular pragma-dialectics:

In the middle 80s we became ever more aware of the many different initiatives outside of logic, among them the pragma-dialectical approach to argumentation and the broad

⁵ See also Johnson (1996), *The Rise of Informal Logic*, and Levi (2000), *In Defense of Informal Logic*.

⁶ In 1983, the Association for Informal Logic and Critical Thinking (AILACT) was founded, which aims to promote research and teaching in the field of informal logic and critical thinking.

⁷ A pioneer of the critical thinking movement in the United States is Ennis (1962, 1989). Other critical thinking theorists are McPeck (1981, 1990), Paul (1982, 1989, 1990; Elder and Paul 2009), Nosich (1982, 2012), and Hoaglund (2004).

⁸ Critical thinking requires additional abilities, such as obtaining and assessing information and clarifying meanings (Johnson 2006, p. 250). Moreover, according to some authors, critical thinking requires specific dispositions (Ennis 1987) – or a specific outlook. Siegel (1988, p. 39) refers to this outlook as "the critical spirit."

international and multidisciplinary community working on argumentation theory. How this latter awareness affected us may perhaps be seen in our 1987 paper “Argumentation as Dialectical.” (Johnson 2003, p. 42).

In the 1990s and in more recent years, the development toward a multidisciplinary approach continued. Walton, in collaboration with Krabbe, developed a new dialectical approach to argumentation (Walton and Krabbe 1995). Another renewal is Tindale’s proposal to incorporate traditional rhetoric into the theory of informal logic (1999, 2004, 2010). Insights from informal logic have also been combined with research in the area of artificial intelligence and computational applications (Verheij 1999; Reed 1997; Reed and Norman 2003). Contrary to these extensions, however, Hansen has recently proposed to narrow down informal logic in such a way that it is only concerned with issues relating to the evaluation of the premise-conclusion relationship (*illative issues*) in an argument or inference:

[...] by narrowing informal logic to deal only with illative issues we not only have the benefit of distancing ourselves from a variety of approaches to argument evaluation (rhetorical and dialectical approaches, for instance) and setting up a unique area of study, we also prepare the ground for a comparison with formal logic that puts both parties on equal footing. (Hansen 2011a, p. 3).

As the historical overview just presented has made clear, an important issue in the discussions among informal logicians has been what exactly the subject matter of informal logic should be and which approach or combination of approaches could best serve as an alternative to formal logic in dealing with the problems of analysis and evaluation of natural arguments. Next to discussions about the definition of informal logic and the kind of approach that should be taken, there were also conceptual discussions concerning the nature of argument and argumentation.⁹ Among the main issues discussed are the following: What definition of *argument* and *argumentation* should be used (Blair 1987; Gilbert 1997)? How can arguments be distinguished from other types of reasoning, such as explanations (Johnson and Blair 1977; Govier 1987)? What other functions than persuasion do arguments have (Blair 2004)? Can nonverbal (i.e., visual) messages contain an argument (Birdsell and Groarke 1996; Blair 1996)? Are arguments always either deductive or inductive or are there other types of argument as well (such as conductive or plausible arguments) (Weddle 1979; Govier 1980, 1987; Hitchcock 1980a; Walton 1992; Johnson 2000; Goddu 2001; Blair and Johnson 2011)?

A large cluster of the theoretical problems that informal logicians deal with are related to the analysis of argumentation. They include questions concerning the interpretation of arguments, such as how arguments can be identified and what a charitable interpretation amounts to (Scriven 1976; Johnson 1981; Govier 1987). Another much debated issue concerns the addition of implicit elements, such as unexpressed premises, conclusions, or assumptions. How should it be decided when implicit elements are to be added, and how can it be determined what form the

⁹ In his informal logic bibliography, Hansen (1990) provides an overview of the main topics of interest to informal logicians.

additions should take (Ennis 1982; Hitchcock 1985; Goagh and Tindale 1985; Govier 1987; Groarke 1992; Grennan 1994; Godden 2005)? The third issue is how to analyze the structure of extended arguments or cases. What types of argumentation structures should be distinguished?

In dealing with argumentation structure, Beardsley's (1950) distinction between *convergent* arguments (several independent reasons support a conclusion), *divergent* arguments (the same reason supports more than one conclusion), and *serial* arguments (an argument is itself supported by another argument) was taken over by many informal logicians. In addition, Stephen N. Thomas (1973) distinguished *linked* arguments: "when a step of reasoning involves the logical combination of two or more reasons" (p. 36).¹⁰ How linked and convergent arguments can be distinguished and whether it is at all possible to do so in a satisfactory way has been the subject of much debate (Conway 1991; Yanal 1991; Vorobej 1995; Goddu 2003). In his monograph *Dialectics and the Macrostructure of Arguments*, Freeman (1991) gave a dialectical analysis of the structural relationships between premises, modalities, rebuttals, and conclusions. By giving dialectical definitions of linked and convergent arguments, he also intended to provide a further clarification of the distinction between these two types of argumentation structure. Related to the problem of the analysis of the structure of argumentation are questions such as how to analyze arguments in which counterarguments are mentioned or rebutted (Scriven 1976; Johnson and Blair 1977; Govier 1985) and how to portray arguments in which suppositional reasoning is used (Fisher 1988; Brandon 1992).

Another cluster of theoretical problems informal logicians have been attempting to solve concerns the evaluation of argumentation. As an alternative to the criteria used in formal logic, several proposals for standards of evaluation have been made. One kind of approach has been to use fallacy theory as a standard: A good argument is then a non-fallacious argument. The series of analyses of individual fallacies proposed by Woods and Walton (1989), in which they respond to Hamblin's (1970) criticism of the state of the art in fallacy theory, have been an inspiration to informal logicians (the Woods-Walton approach to fallacies is discussed in Sect. 6.7). The research on fallacies carried out by informal logicians has not led to a unified theory of fallacies but to a discussion of a great many individual fallacies, such as *ad hominem*, *ad verecundiam*, and begging the question. In the 1990s, Walton developed together with Krabbe a dialectical approach, in which fallacies – like in pragma-dialectics – are seen as violations of dialectical rules. According to Walton and Krabbe (1995), the rules that are violated pertain to specific types of dialogical exchanges (see also Walton 2007).

An alternative to using fallacy theory as a basis for the evaluation of argumentation was proposed by Johnson and Blair (2006). In their textbook they explain that an argument should satisfy three criteria: relevance, sufficiency, and acceptability.

¹⁰ For an overview of the different approaches to argumentation structure in informal logic, see Snoeck Henkemans (2001). See also Sect. 1.3 of this volume.

Fallacious arguments are arguments in which one or more of these criteria have been violated.¹¹ A related approach in informal logic focuses on argument schemes as forms of argument which are in principle legitimate and have their own specific evaluation criteria. Fallacies are then seen as cases of argumentation that do not satisfy these criteria (Walton 1996a; Walton et al. 2008; Groarke and Tindale 2012). The criteria are – like in pragma-dialectics – typically formulated as critical questions.¹²

There is also a considerable group of informal logicians who make in their approach use of the Toulminian notion of field dependency. They usually connect with epistemology and take the view that the standards for the evaluation of an argument should be furnished by the epistemology of the field to which the argument pertains (McPeck 1981; Battersby 1989; Weinstein 1990; Pinto 1994; Freeman 2005a, b).

7.3 Blair and Johnson's Contributions to Informal Logic

In their textbook *Logical Self-Defense* (2006, first published in 1977, second edition 1983), Ralph H. Johnson and J. Anthony Blair introduce three criteria an argument should satisfy to be considered a good argument: relevance (R), acceptability (A), and sufficiency (S). According to Johnson and Blair (1983, p. 34), these so-called *RAS criteria*¹³ define “a logically good argument” and “any argument which fails to satisfy one (or more) of these requirements is a fallacious argument.” Blair summarizes the criteria for argument quality as follows:

[...] an argument is a good one if its grounds or premises are singly or in combination relevant as support for the claim in question, individually acceptable, and together (if relevant and acceptable) sufficient to support the claim on behalf of which they were offered. (2011a, p. 87).

The RAS criteria were intended as a replacement for the logico-epistemological criterion of soundness.¹⁴ For Johnson and Blair, the advantage of these criteria compared to the soundness criterion is that they not only rule out question-begging arguments (the premise of such arguments would not be acceptable) but also make it possible to count “strong defeasible, plausible, or presumptive arguments as good arguments” (Blair 2011a, p. 88).

¹¹ This approach has also been taken by Freeman (1988), Little et al. (1989), and Seech (1993).

¹² One of the insights resulting from looking at fallacies in this way is that not all arguments which share some formal characteristics of a fallacy are indeed fallacious. A personal attack, for instance, is not fallacious if it is made to cast doubt on the credibility of a witness in a court case.

¹³ They are also called the *ARG conditions* (“G” for (sufficient) grounds).

¹⁴ In formal logic, the concept of relevance is also used, but the definition of this concept is somewhat different from that of informal logicians. It is applied to the relation between the antecedent and consequent of implications.

Johnson and Blair's criteria, which are adopted by many others, are sometimes regarded as the defining characteristic of the informal logic approach to argumentation. Nonetheless, the criteria have also been criticized, by Johnson and Blair themselves and by others. According to Blair, a general problem is that the criteria are too limited to allow for a full evaluation of everyday arguments:

The background assumption, that it is sufficient to evaluate the arguments found in the contexts we had in mind from a logical point of view (for we regarded the RAS as criteria of the logic of arguments), ignoring their dialectical and rhetorical properties, has over the ensuing years been very much called into question. (2011a, p. 88).

Each of the three criteria individually has also been subjected to criticism. A problem with the criterion of relevance is, according to Biro and Siegel (1992), that it is superfluous, since it is already presupposed by the criterion of sufficiency:¹⁵

The second criterion, relevance, appears to be simply a special case of the third criterion, since if a premise is irrelevant it offers no support, and if it is relevant, the crucial issue of the strength of support it affords the conclusion must still be addressed. (p. 98).

Blair (2011a) concedes that irrelevant premises, since they provide zero support, are in fact not premises at all, so they do not need to be evaluated. He believes that the primary role of relevance is in the interpretation process: to make decisions about which parts of the discourse should be seen as arguments. However, he contends that in the evaluation of cases where the discourse and context make it clear that an author intended a proposition to count as a reason, the criterion of relevance still has a role to play, even though the proposition concerned turns out to have no probative bearing on the claim (Blair 2011a, pp. 92–93).

By using the acceptability criterion instead of the logical criterion of truth of the premises, Johnson and Blair aim to do justice to Hamblin's (1970) criticism that the truth criterion is neither sufficient nor necessary. The criterion is not sufficient, because even when a premise is true, it cannot convince if it is not known to be true, and it is not necessary, because for convincing acceptability is sufficient.¹⁶ Johnson (1990, 2000, pp. 197–199) later defends the truth criterion and proposes to add it to the RAS criteria.¹⁷ One of his main arguments is that "theorists who have officially discharged the truth requirement [...] continue to rely on [it]," for instance, when

¹⁵ Another criticism of the relevance criterion is that the concept of relevance is too vague and no satisfactory account of this concept has been given (Woods 1994).

¹⁶ Another reason for Hamblin to reject truth as a criterion is that it is an "onlookers' concept" and "presupposes a God's eye view of the arena" (1970, p. 242).

¹⁷ In Johnson (2000, pp. 336–340) the problem of possible tensions between applying both a truth and an acceptability criterion in the evaluation of arguments is discussed. Application of the two criteria may lead to conflicting outcomes: Premises may be false, but acceptable, or true but unacceptable.

pointing out inconsistencies in an argument (2000, p. 197). Van Rees (2001) has argued that this argument is not relevant:

Someone who wants to maintain, as these theorists do, that arguments must not be inconsistent [...] is certainly not thereby necessarily committed to the view that the premises need to be true. (p. 236).

In a similar vein as van Rees, Blair (2011a, p. 94) passes the following judgment on Johnson's defense of the truth requirement: "it follows from none of his arguments that for an argument to count as a good one, its premises must be true."

Another issue that is raised with respect to the criterion of acceptability is whether it should be seen as identical to Hamblin's criterion of acceptance (i.e., a premise is acceptable if the recipient of the argument accepts it). This interpretation of the criterion of acceptability has been criticized for the fact that the quality of the premises would then be relative to the audience to whom the argument is presented, so that it is not guaranteed that arguments that are accepted are indeed "worthy of acceptance" (Blair 2011a, p. 94).¹⁸

According to Blair, underlying the question of whether *truth* or *acceptance* should be seen as the right criterion for good arguments is a disagreement over what purpose one thinks arguments should serve:

In the case of acceptability, the use to which the argument is being put makes a difference. With arguments used to persuade, the premises the parties will accept will thereby be acceptable. With arguments used to justify, the general test is that the premise be reasonable to accept. Premises known to be true clearly meet that test, but so will premises that are probable or plausible under certain conditions. (2011a, p. 99).

Blair does not see a need to choose between these two uses of argument, because both uses occur and can be seen as legitimate (2011a, p. 94).

As to the third criterion of sufficiency, the main problem is how to determine what should count as sufficient evidence.¹⁹ Sufficiency is a matter of degree, which means, according to Johnson, that what is sufficient in one set of circumstances may not be sufficient in others (2000, p. 205). Depending, for instance, on how much is at stake, the standards may be stricter in one situation than in the other. So, in order to develop

¹⁸ Blair and Johnson (1987, pp. 50–53) tried to resolve this problem of epistemological relativism by requiring that the arguers address not merely the individual *other* but a community of interlocutors who hold well-informed beliefs about the subject under discussion and who exhibit certain traits of reasonableness. The notion of a community of model interlocutors bears close resemblance to Perelman and Olbrechts-Tyteca's notion of *universal audience*. According to Tindale, however, the fact that, unlike in Perelman's approach, in Blair and Johnson's proposal there is no connection between the ideal audience and the immediate audience "makes it an unattractive proposal for a rhetorical approach to argumentation" (1999, p. 117).

¹⁹ In the 1994 edition of their textbook *Logical Self-Defense*, Johnson and Blair specify three ways in which an argument can lack sufficiency, which entail criteria of sufficiency: Premises, taken together, are not sufficient to support the conclusion if they do not provide evidence which has been systematically gathered by an appropriate method, if they do not supply a sufficient sample of the various kinds of relevant evidence, or if they ignore the presence of, or the possibility of, contrary evidence (Johnson and Blair 1994, p. 72).

standards for sufficiency, Johnson argues, it must be established which circumstances or which elements from the context influence the weight of evidence that is required: “The difficult question for informal logic and the theory of argument is how to define context for the purposes of assessing and critiquing arguments” (2000, p. 205). Blair believes that, just as those for acceptability, the standards for sufficiency may be different for persuasive arguments than for arguments used to justify:

In justificatory arguments it might be very important to be as confident as possible that the added evidence is true, and if so, strengthening the argument can require, besides the additional premises, also in each case the reasons for thinking them to be true. In persuasive arguments with a non-interacting audience, the arguer must try to judge how much evidence the audience will need to be convinced. (2011a, p. 96).

In his monograph *Manifest Rationality*, Johnson (2000) has proposed that in addition to the RAS criteria (to which he adds the criterion of truth), which are necessary to evaluate the illative core of an argument (the premise-conclusion structure), dialectical criteria should be used to evaluate the extent to which an argument deals adequately with alternative views and objections. According to Johnson, it is too limited to restrict oneself to a *structural* view of arguments, that is, to seeing arguments only as a text or discourse that has the structure of a claim supported by reasons:

[. . .] argument has its structure (reasons in support of a thesis, or premises plus conclusion) because of the purpose it serves – rational persuasion. A significant limitation of the structural view is that it ignores this important aspect – purpose or function. (2000, p. 148).

To overcome the limitations of the structural view, Johnson proposes an alternative, pragmatic conception of argument, which focuses on what he regards as the primary purpose of argumentation, rational persuasion. He gives the following definition of rational persuasion:

By rational persuasion, I mean that the arguer wishes to persuade the Other to accept the conclusion on the basis of the reasons and considerations cited, and those alone. In entering the realm of argumentation, the arguer agrees to forswear all other methods that might be used to achieve this: force, flattery, trickery and so forth. (2000, p. 150).

According to Johnson, people engaging in the practice of argumentation do not just embrace rationality, but they “exhibit what it is to be rational” (p. 162): “The arguer acknowledges that there are objections and problems with the position (. . .). The critic acknowledges that there is rationality in the arguer’s position. Thus, I might think of argumentation as a prize exhibit of rationality” (2000, p. 163). In Johnson’s view, it is this requirement of “manifest rationality” that distinguishes argumentation from “rhetoric.” Rationality itself is not enough to differentiate the two, he believes, since rationality is internal to and constitutive of both practices:

What separates rhetoric from argumentation is that the latter is bound by the requirement of manifest rationality. The arguer cannot ignore objections to his argument, even if it is not known how to forestall them, because it would not appear to be rational and so would violate the requirement of manifest rationality. The rhetor is under no such constraint: If ignoring the objection will lead to a more effective communication, and if doing so is rational, then the objection can be ignored. (p. 163).

In view of its purpose of rational persuasion, Johnson claims that argumentation not only requires a specific structure, the illative core, but also a dialectical tier. Whereas the first tier, the illative core, is “meant to initiate the process of converting Others, winning them over to the arguer’s position,” the dialectical tier is required to persuade the opponent rationally by dealing with objections and criticisms (p. 160):²⁰

The illative core is not sufficient for an argument. Because of the dialectical nature of argumentation, the elevator of argumentation needs to rise higher. That there is an argument in the first place means that the conclusion is at least potentially controversial. There is a mixture of opinion, a background of experience, information, and knowledge about this issue. There are those who take a different view; there are adversary views; there are typically well-known objections. An argument that does not take into account these dialectical realities is in some important sense incomplete. Not just poor, but incomplete. It lacks the dialectical tier. (2000, p. 206).

Distinguishing next to the illative core a separate dialectical tier means that there is also a distinction to be made between two types of criteria for argumentation. Besides the criteria of relevance, acceptability, sufficiency, and truth, which are to be applied in the evaluation of the illative core, Johnson therefore also formulates criteria for the dialectical tier. According to Johnson (2000, pp. 207–208), when evaluating the dialectical tier of an argument, the following questions should be raised:

1. How well is the arguer able to deal with the standard objections and criticism?
2. How well does the argument address itself to alternative positions?
3. How well does the argument deal with consequences/implications?

The last question is relevant if the arguer responds to the criticism that the position he or she advocates leads to untenable consequences or has unacceptable implications.

Johnson admits that the criteria for the dialectical tier are still in important respects unclear: “if the arguer is required by the nature of argument to deal with objections and criticisms, how are we to specify which ones?” He proposes to require that the arguer deals with “The Standard Objections,” the “salient objections typically or frequently found in the neighborhood of the issue” (2000, p. 332). In addition, Johnson thinks that the arguer is “obliged to deal with any objections that the arguer knows the audience will expect that he or she deal with [...] and also those objections the arguer believes his or her position can handle” (p. 332). However, Johnson is not very happy with the idea that the expectations of the audience should be decisive for the arguer’s dialectical obligations, since audiences may be heterogeneous, and there may also be worthwhile objections

²⁰ In “Argumentation as Dialectical,” Blair and Johnson (1987) already advocated a dialectical approach to argumentation. They then sketched the outlines of a dialectical account of sufficiency that bears strong resemblance to Johnson’s later notion of dialectical tier (pp. 50–53). However, in Johnson’s (2000) view, the dialectical obligations the arguer should fulfill in his dialectical tier are not intended to replace the original account of sufficiency, but form an additional criterion of evaluation.

that they are not aware of (p. 333). His conclusion is therefore that “the whole issue of how to specify the arguer’s dialectical obligations deserves further study” (p. 333).

In response to criticisms that in *Manifest Rationality* the criteria for dialectical adequacy have not yet been specified, Johnson (2003, p. 49) proposes three criteria for the dialectical tier: “appropriateness, accuracy, and adequacy.”²¹ According to Johnson, dialectical adequacy is achieved, provided that:

- (a) The arguer deals fairly, accurately with each objection.
- (b) The arguer’s response to the objection is adequate.
- (c) The arguer deals with the appropriate objections.

Johnson’s idea that arguments require a dialectical tier has raised much discussion. One important objection, put forward by Govier, is that the proposal is unworkable, since it leads to an infinite regress:

The regress problem seems to arise for Johnson’s account because of his claim that every argument is incomplete without a dialectical tier. In my terminology, this means that every arguer has a dialectical obligation to buttress his or her main argument with supplementary arguments responding to alternative positions and objections. Supplementary arguments are also arguments. Thus they too would appear to require supplementary arguments addressing the alternatives and objections. Those supplementary-to-the-supplementary arguments, being again arguments, will require the same. And this line of reasoning can clearly be continued. Thus Johnson’s view seems to imply an infinite regress. (1999, pp. 232–233).

In response to Govier’s objection, Johnson has pointed out that his proposal in *Manifest Rationality* was not that every argument requires a dialectical tier, but only that the paradigm case of argument should display this structure (2003, p. 45).

Michael Leff (1941–2010) has criticized Johnson’s notion of dialectical tier for its lack of “situational ballast” and argues that Johnson has set himself an impossible task: “Johnson wants to construct an autonomous dialectical system that can encompass all instances of argument, and to achieve this end he must know the criteria for dialectical adequacy in advance of any particular case of dialectical argument” (2000, p. 251). According to Leff, rhetorical insights may help to come to a grounded judgment about what dialectical adequacy amounts to in a specific situation. If rational argument is to mean something in practice, he claims, “it must be conceived in relationship to the controversies and disagreements that enter into our real world experience, and it is precisely there that argument becomes dialectical” (p. 252).²²

²¹ In reaction to the criteria for dialectical adequacy presented in an earlier paper by Johnson (1996, pp. 264–266, a republication of Johnson, 1992), Govier had argued that these criteria are in fact no criteria, since they offer no guidance as to how one can establish whether the arguer has adequately dealt with objections, alternative positions, and consequences (1999, p. 215).

²² In pragma-dialectics, pragmatic insights play the contextualizing role that Leff ascribes to rhetorical insights. By making use of insights from speech act theory, it becomes possible to establish which “disagreement space” is involved in the argumentation and thus to specify what is at stake in argumentative discourse (see Sect. 10.3 of this volume).

A number of criticisms concern the status of the theory as it is presented in Johnson's *Manifest Rationality*. Although Johnson calls his approach *pragmatic*, van Rees (2001, p. 234) has argued that his conception of dialectic cannot truly be seen as pragmatic. Since Johnson attempts to establish in advance what the criteria for dialectical adequacy are, the dialectical obligations concern "objections in the abstract, not the real objections which are part of actual controversy," and this is not compatible with a pragmatic notion of dialectic:²³

In a truly pragmatic conception of dialectic, what the arguer needs to answer are nothing more (but also nothing less) than the actual or anticipated objections of the opponent that he tries to convince. [...] In a truly pragmatic conception, the whole problem of infinite regress would never arise, because such a conception would do justice to the fact that arguments are brought forward against and draw upon a background of shared starting points. What belongs to the set of shared starting points by definition requires no further support for the duration of that particular discussion. (2001, p. 234).

Hansen (2002a, pp. 273–274) has argued that although Johnson presents his theory as dialectical, the standard of manifest rationality that he introduced, i.e., the requirement that argumentation should be patently and openly rational, "appears to be a rhetorical requirement because it has to do with the presentation of reasoning, not with the quality of the reasoning itself." Also, the fact that "the rational persuader must address even the misguided objections to his view shows that persuasion must be tailored to its intended audience, and that is a rhetorical rather than a logical or dialectical demand."

7.4 Finocchiaro's Historical and Empirical Approach

In line with the central aim of the informal logic movement, Maurice A. Finocchiaro has made a substantial contribution to the analysis and evaluation of real arguments. More specifically, he is one of the first scholars to use informal logic for the interpretation of scientific controversies.

Finocchiaro's approach to arguments in scientific controversies can be characterized as *historical* and *empirical*. The first trait is manifest in the way he describes the subject matter of his research. Finocchiaro gives a meticulous historiography of the scientific controversy at issue, providing the relevant information about the scientists involved, the debates conducted, the arguments put forward, and the historical context in which the controversy has evolved. The second trait is manifest in the way Finocchiaro evaluates the argumentative aspects of the controversy at issue. Rather than developing criteria for good arguments from an *a priori* perspective, such as that of formal logic, he holds that such criteria can and should

²³ According to van Rees, Johnson's account is not truly dialectical either, since Johnson sees producing reasons and discharging one's dialectical obligations as different things, whereas in a truly dialectical account, argument *per se* would be seen as an attempt to take away (anticipated) objections and doubt (2001, p. 233).

be found within the empirical discourse itself: The standards for good arguments are exemplified in the argumentation put forward by the scientists involved in the controversy.

In a collection of articles written over a period of three decades, Finocchiaro (2005a) theoretically reflects upon his historical and empirical approach to argument analysis and evaluation as employed in his works on scientific controversies. Below, we shall first indicate how he has situated himself within the informal logic movement. Then, we shall elucidate the main characteristics of his approach.²⁴

Like many other informal logicians, Finocchiaro was inspired by Toulmin's criticisms regarding the formal logical approach to argumentation:

[...] I adopted from Toulmin what seemed to be his solution of the problem of the epistemology of the science of logic and argument. He seemed to be suggesting a critique of formal or symbolic logic as being insufficiently concerned with actual human reasoning, with nondeductive arguments, such as are common in law, with argumentation in natural language, and with practical applications; and he seemed to be making a plea for a logical theory that was more empirical, more general, more natural, more practical, and more historical. (2005a, p. 7).

However, unlike most other informal logicians, Finocchiaro proposes to conceive of informal logic as the theory of reasoning rather than the theory of argument. He describes this theory of reasoning as “the attempt to formulate, to test, to clarify, and to systematize concepts and principles for the interpretation, the evaluation, and the sound practice of reasoning” and claims that his approach “corresponds to the central theoretical concerns of those who have explicitly identified themselves with the field of informal logic” (2005a, p. 22). Finocchiaro emphasizes that in using the term *reasoning*, he does not mean to adopt a formal logical approach, but rather an empirical one:

The emphasis on reasoning is also meant as a reminder that what is being studied here is a mental activity that actually occurs in the world and which leaves empirical traces (normally in the form of written or oral discourse). This in turn means that the theory of reasoning has an empirical orientation and is not a purely formal or abstract discipline. (2005a, p. 22).

For this reason, Finocchiaro sometimes refers to his approach as *empirical logic*, at the same time emphasizing that “the empirical is contrasted primarily to the *a priori*, and not, for example, to the normative or the theoretical” (2005a, p. 47).

Finocchiaro's historical and empirical approach to arguments is exemplified in his extensive work on scientific controversies, especially those concerning Galileo's defense of Copernicus.²⁵ As he explains, his approach is based on four

²⁴ In composing this section, we have made use of Pinto (2007), Woods (2008), and Wagemans (2011a).

²⁵ Among his publications on Galileo are Finocchiaro (1980, 1989, 2005b, and 2010). Apart from Galileo, Finocchiaro's research into scientific reasoning includes also other important figures in the history of science such as Huygens, Newton, Lavoisier, Einstein, and Boltzmann.

methodological principles: It can be characterized as *historical-textual*, *dialectical*, *interpretative*, and *self-referential*. We shall briefly elucidate these principles below.

The first principle is related to the nature of the object of research. Given the importance of a critical exchange of arguments in bringing about scientific progress, in his historiographies of scientific controversies, Finocchiaro focuses on a very detailed interpretation and reconstruction of the arguments involved and the historical and textual context in which they are put forward. In this sense, his approach can be characterized as *historical-textual*.

The second principle is related to Finocchiaro's focus on the argumentative aspects of scientific controversies. By characterizing his approach as *dialectical*, Finocchiaro indicates that in reconstructing the discourse, he tends "to stress counterarguments, objections, criticism, evaluation, potential (and not necessarily actual) dialogue, and the clarification (rather than the resolution) of differences of opinion" (2005a, p. 14).

The third principle refers to Finocchiaro's theoretical starting points regarding the role of arguments in scientific controversies. In order for an argument to be qualified as a good argument, it needs in his view not necessarily be instrumental in the resolution of a difference of opinion. Arguments may also be qualified as such when they contribute to the clarification of the controversy in which the discussants are involved. For this reason, Finocchiaro characterizes his approach as *interpretative*: "it stresses the understanding and reconstruction of arguments (as distinct from their evaluation and criticism) to a far greater degree than is commonly the case" (2005a, p. 14).

A fourth and final methodological trait of Finocchiaro's approach is *self-referentiality*. The term expresses the intention to apply the abovementioned principles not only to the analysis of scientific controversies but also when dealing with contributions of his scholarly peers in informal logic and argumentation theory. This principle is exemplified in Finocchiaro's interpretations of the contributions of many important scholars in the field.²⁶

Finocchiaro's recent book on the controversies surrounding Galileo's defense of Copernicus's views that the earth moves by spinning on its axis (the geokinetic thesis) as well as around the sun (the heliocentric thesis) shows the abovementioned methodological principles at work. But there is a further reaching insight. According to Finocchiaro, the interpretation and evaluation of the controversies at issue take the form of a defense of what he calls:

[...] a particular and yet *overarching thesis*: that today in the context of the Galileo affair and the controversies over the relationship between science and religion and between institutional authority and individual freedom, *the proper defense of Galileo should have the reasoned, critical, open-minded, and fair-minded character which his own defense of Copernicus had.* (2010, p. x, original italics).

²⁶ In chapters containing critical essays, Finocchiaro (2005a) discusses the work of Perkins, Massey, Siegel, Cohen, Gramsci, Barth and Krabbe, Freeman, Arnauld and Nicole, the Amsterdam School, Walton, Johnstone, Goldman, Johnson, Hamblin, Shapere, and Popper.

Thus Finocchiaro endorses an ethic of reciprocity – the maxim that people should be treated in the same way as they treated others – as the overarching thesis of his work on Galileo. In this way, he also shows how the normative principle underlying the interpretative character of his informal logical (or empirical logical) method of analyzing and evaluating scientific controversies can be articulated: The evaluation of historical scientific controversies should not take place by applying *a priori* standards, but by using standards that are empirical in the sense that they can be deduced from the reasoning of the scientists involved.

7.5 Govier's Critical Analysis of Key Issues in Informal Logic

In our overview of the historical background of the informal logic movement and the main issues investigated by its contributing scholars in Sect. 7.2 of this volume, we mentioned two important respects in which informal logic differs from formal logic. First, informal logicians do not view the logical standard of deductive validity as the only standard for the evaluation of arguments, but seek to develop alternative standards. Second, instead of focusing on the abstract products of reasoning processes, informal logicians aim at giving a theoretically justified analysis and evaluation of argumentation as it occurs in real-life contexts. In this section we shall discuss the work of Trudy Govier, whose substantial contributions to the informal logic movement clearly reflect these two characteristics.

In her essays, Govier has criticized several forms of what she regards as *deductivism* and made proposals for analyzing and evaluating types of argument on the basis of other standards than (those related to) formal validity. Moreover, she has addressed a great many problems associated with the analysis and evaluation of natural language arguments and written an influential textbook (Govier 1985) on the reconstruction and assessment of argumentative discourse in a wide variety of contexts.²⁷

In discussing Govier's work on informal logic, we first concentrate on her views concerning the differences between formal and informal logic. Then, we present her critical analysis of some of the key issues in informal logic: argument types, implicit premises, and fallacies. Finally, we give a brief characterization of the general nature of her contributions to informal logic.²⁸

Govier's criticisms of formal logic are similar to those of Toulmin and others. She argues that when it comes to the analysis and evaluation of natural language arguments, the tools provided by formal logic are not optimally suited to do the job.

²⁷ Apart from her contributions to informal logic, Govier has written on a number of topics in social philosophy, including trust, forgiveness, and reconciliation. We shall not address these writings here.

²⁸ In composing this section, we have made use of Allen (1990) and Blair (2013).

Moreover, she regrets that many logicians are blinded by the paradigm that formal validity is the ultimate standard for argument evaluation:

Formally valid arguments seem to be functioning as a kind of paradigm. This paradigm works so strongly on formally trained logicians and philosophers that they are unable to take account of the obvious. The obvious is that rigor and reality are uneasy mates, that real argumentation is not easily or usefully amenable to formal treatment, and that there are many interesting nonformal questions about arguments which cry out for attention. (Govier 1987, p. 10).

More specifically, Govier criticizes the idea that arguments must be deductively valid to be good arguments. She makes a distinction between *skeptical* deductivists, who observe that most natural language arguments are invalid and remain of the opinion that “all invalid arguments are equally and totally flawed,” and *nonskeptical* deductivists, who recognize that such arguments are invalid but regard them “as incomplete [...] seeing them as having tacit premises not spelled out by the arguer” (1987, p. 25).

According to Govier, formal logic is not only an inadequate basis for the analysis and evaluation of natural language arguments but also unable to address some of the key issues in the study of argumentation:

[...] such questions as ‘How many different types of argument are there?’, ‘When and why should we regard an argument as having missing or unstated premises?’, and ‘Is the truth of the premises too strong a condition to demand for soundness of argumentation?’, cannot be answered by formal techniques. (1987, p. 13).

These questions refer to the key issues of types of argument, of unstated premises, and of the assessment of argumentation. Below we discuss Govier's critical reflections on these three issues.

As to the first issue of the number of different argument types, Govier holds that the division between deductive and inductive arguments commonly accepted by positivist philosophers is not tenable: “The great divide between deductive and inductive arguments is spurious and theoretically dangerous, because it makes it too easy to ignore the many nondeductive arguments which are not classically inductive” (1987, p. 53). In order to fill the gap, Govier draws attention to the work of two philosophers who have presented interesting dissenting views on reasoning and argument which might provide a starting point for the development of a more adequate classification of argument types.

The first of these philosophers is John Wisdom, who in a series of lectures delivered in 1957 at the University of Virginia (Wisdom 1991) set out a type of reasoning that he termed *case-by-case reasoning*. By this he means a type of reasoning that is neither deductive nor inductive and in which inferences are drawn regarding a particular case from a kind of analogy with similar cases. According to Govier, it is hard to give a general rule by which arguments based on case-by-case reasoning can be evaluated: “Case-by-case reasoning seems recalcitrant to treatment by general rules, because we cannot say in general what cases are going to be similar and why” (1987, p. 64). Nevertheless, in practice, this type of reasoning frequently occurs and discussants may find a way to assess the arguments involved: “Though rules may not exist to resolve disputes about the merits of these

analogy arguments, there is still room for rational debate about pertinent issues. Similarities and differences may be pointed out, and the significance of these can be rationally discussed” (1987, p. 65).

The second philosopher Govier draws attention to is Charles Wellman, who argues in his monograph on ethical reasoning *Challenge and Response* (Wellman 1971) that there is a species of ethical reasoning that is neither deductive nor inductive. He calls this species *conductive reasoning*:

Conduction, a third type of reasoning, is distinct from these, being ‘that sort of reasoning in which (1) a conclusion about some individual case (2) is drawn nonconclusively (3) from one or more premises about the same case (4) without any appeal to other cases.’ [...] A conductive argument, then, depends crucially upon the concept of relevance. It differs from a deductive argument because the factors cited do not entail, and are not put forward as being sufficient for, the conclusion stated. It differs from an inductive argument in that it is not a case of confirming or disconfirming hypotheses by instances and in that (typically) separately relevant reasons are cited in support of a normative, conceptual, or philosophical conclusion. (Govier 1987, p. 66).

According to Govier, Wellman’s conductive reasoning could well have a counterpart in argumentation, which would result in adding conductive arguments as a third category besides deductive and inductive arguments.

Govier addresses the key issue of the types of arguments not only in her theoretical work but also in her widely used textbook (Govier 1985, 7th edition 2010), in which she elaborates on the practical problems one may encounter in analyzing and evaluating natural language arguments. In discussing the characteristics of other types of arguments, she explains those of arguments based on reasoning from case to case (Govier 1985, ch. 9) as well as conductive arguments (Govier 1987, ch. 10) and provides a great many instructive reconstructions and evaluations of real examples.

As to the second key issue of implicit or unstated premises, Govier adopts Scriven’s general idea concerning the use of the *principle of charity* in the reconstruction of arguments. She further articulates this idea by stating that in interpreting other people’s contributions to argumentative discourse, we should adopt a *principle of moderate charity*. By this she means that we should not “interpret others as having made implausible claims or faulty inferences unless there is good empirical reason to do so” and also that in case the empirical evidence does not allow us to decide clearly in favor of one of the possible interpretations, we should “adopt that interpretation according to which the claims made are most plausible and the inferences most reasonable” (1987, p. 152). The rationale for applying this principle of moderate charity lies in the fact that we may presume that people when contributing to argumentative discourse are behaving in line with the normal function of argumentation as a social and rational practice:

We presume, other things being equal, that others are participating in the social practise of rational argumentation. That is, they are trying to give good reasons for claims they genuinely believe, and they are open to criticism on the merits of their beliefs and their reasoning. They are operating within the purpose of the exchange: that is, it is their purpose to communicate information, acceptable opinions and reasonable beliefs, and to provide

good reasons for some of these opinions and beliefs by offering good arguments. If we assume this, then if there is an ambiguity in the discourse, and we can interpret it either as badly or as poorly reasoned, we will opt for the more sensible interpretation. (Govier 1987, p. 150, original italics).

As a case in point, Govier shows how the principle of charity can be used to fill in a missing premise in the argument. According to her, missing premises are a subset of the unstated assumptions that go with every argument. In what she calls a “deductivist” policy on missing premises, the argument is completed by adding the associated conditional, i.e., a conditional statement that has the conjunction of the argument’s premises as its antecedent and the argument’s conclusion as its consequent. This policy, however, results in a “redundant and useless addition” because it “simply reiterates the original argument” (1987, p. 86). In order to fill in the missing premises of an argument, we should judge the argument as being an inferentially unsound instantiation of a specific type of argument that “would be inferentially sound if one of a candidate set of supplementary premises were added” (1987, p. 102). Then, on the basis of the modest charity principle as well as other interpretive considerations, we select the best candidate as a missing premise.

As with the argument types discussed earlier, Govier translates her theoretical considerations about the problem of missing premises in her textbook on the analysis and evaluation of real arguments into practical guidelines such as “*no supplementation without justification*” (1985, p. 33, original italics). She applies these guidelines to the reconstruction of real examples of arguments that contain missing or unstated premises.

As to the third and final key issue of the assessment of argumentation, Govier, like Hamblin and others, is of the opinion that deductive invalidity is neither a necessary nor a sufficient condition for fallaciousness of arguments. It is not a necessary condition because, for example, arguments exemplifying the straw man do not necessarily have to be invalid since the misrepresentation of the position being criticized may be found in a premise. And it is not a sufficient condition either, because there are non-fallacious arguments that are not deductively valid (Govier 1987, pp. 186–187).

In her textbook, Govier (1985) provides a great many evaluations of examples of natural language arguments in which a fallacy is committed. All fallacies are explained as some sort of departure from the RAS criteria stating that for an argument to be cogent, its premises must be acceptable (A), relevant to the conclusion (R), as well as providing sufficient grounds (S). Although Govier claims that all fallacies exemplify some departure (or departures) from these standards, she by no means claims that all departures exemplify fallacies. Rather than presenting a general theory of fallacies, she carefully explains in each case which standards of good argument apply and why these standards have been violated in the example at issue.

In general, then, Govier’s theoretical contributions to informal logic show a keen interest in the assumptions scholars make when developing methods for argument analysis and standards for argument evaluation. She critically adopts such methods

and transforms and refines them on the basis of pragmatic and linguistic insights to make them optimally suitable for the accomplishment of the task for which they are designed. Apart from having contributed to the development of theoretical instruments for the analysis and evaluation of natural language arguments, Govier has also shown in a clear and instructive manner how such instruments can be used.²⁹ In so doing, she has emphasized the connection between the informal logic movement and the critical thinking movement we pointed at in our overview of the historical development of informal logic in Sect. 7.2. Her practical guidance on the application of theoretical insights developed within informal logic to the practical assessment of real arguments is a paradigm example of how to foster the development of people's critical thinking abilities.

7.6 Epistemological Approaches

One of the central aims of scholars belonging to the informal logic movement is to develop norms, standards, or criteria for evaluating natural language arguments. In developing such norms, some scholars take their inspiration from a branch of philosophy called *epistemology*, i.e., the theory of knowledge and justified belief. The basic idea behind an epistemological approach to informal logic is that argumentative exchanges should lead to an improvement of the *epistemic state* or *epistemic situation* of the people involved. This means that at the end of the argumentative exchange, they should have acquired new knowledge or be able to better justify the beliefs they already had. Ideally, their beliefs will have been brought in accordance with – or a step closer to – the truth.

The idea that argumentative exchanges should lead to epistemic improvements is similar to the basic idea behind the critical thinking movement that people should learn how to critically judge the opinions they are presented with. Scholars such as Battersby (1989) and Weinstein (1994) established a connection between the epistemological approach and critical thinking, defining *critical thinking* as *applied epistemology*. In this section, we shall refrain from discussing the use of epistemological insights for the enhancement of critical thinking abilities but present an overview of epistemological criteria for the evaluation of argumentation. First, we shall pay attention to the general starting point of epistemological approaches to informal logic. Then, we shall discuss the various types of criteria for good arguments that scholars taking this starting point have proposed as well as the general characteristics of an epistemological theory of fallacies.

²⁹ Apart from the key issues discussed in this section, Govier (1985) addresses in her textbook also the issues of how to distinguish argumentation from explanation, how to pin down an argument (ation) structure, how to evaluate arguments on the basis of the RAS criteria, how to diagram arguments, how to use insights from formal logic, and how to apply methods of argument assessment within the contexts of the social sciences and social life.

Finally, we shall provide a short overview of Robert C. Pinto's epistemological approach to informal logic.³⁰

According to Christoph Lumer, the epistemological approach starts from the assumption that the "standard output of argumentation is knowledge or justified belief" (2005, p. 190).³¹ Lumer elucidates this starting point by contrasting it with the starting point of scholars he takes to represent a *rhetorical* approach to argumentation, such as Perelman and Olbrechts-Tyteca in their proposal for a new rhetoric, and those he takes to represent a *consensus* approach, such as van Eemeren and Grootendorst in their proposal for a pragma-dialectical theory of argumentation.³²

According to Lumer, the rhetorical approach takes the standard output of argumentative processes to be *persuasion* in the sense of the establishment or amplification of the audience's belief in the standpoint defended by the speaker. He criticizes the approach for leading to bad results: "Since rhetoric does not strive for truth and knowledge it will often lead to false beliefs, i.e., disorientation about how the world is, and thus to false decisions with tremendously negative consequences" (2005a, p. 190).

The consensus approach to argumentation, in Lumer's view, takes the standard output of argumentative processes to be a *shared belief* in the sense that the arguer and the addressee agree as to the acceptability of the belief at issue in the discussion. According to him, this approach suffers from a similar problem as the rhetorical approach. Since no objective criteria for justified belief are provided, the consensus approach is not able to guarantee that the shared beliefs that are the outcome of argumentative processes qualify as justified beliefs: "The truth of a belief simply does not depend on someone else's sharing this belief, but on fulfilling the truth conditions of the proposition in question. Even the idea of consensus theorists that the road towards consensus has to be regulated by rules that again are jointly accepted does not help, as long as this consent is not based on objective criteria for truth and acceptability" (2005a, p. 191).³³

The upshot of these criticisms is that the *subjective* or *intersubjective* standards for good argument developed within the approaches to argumentation

³⁰ In addition, Adler's contribution should be mentioned (e.g., Adler 2013).

³¹ In composing this part of the section, we have made use of the overview of epistemological approaches provided by Lumer (2005) as the guest editor's introduction to two consecutive special issues on the epistemological approach to argumentation of the journal *Informal Logic*: 25(3) and 26(1).

³² For an elaborate description of these approaches, see Chap. 5, "The New Rhetoric" and Chap. 10, "The Pragma-Dialectical Theory of Argumentation", respectively. Consulting these chapters will also make clear that the criticisms made by representatives of the epistemological approach address only a small part of the insights developed in these approaches.

³³ For more specific criticisms of the "consensus approach", in particular of pragma-dialectics, see Siegel and Biro (1997, 2008, 2010) and Lumer (2010, 2012). For a response to these criticisms, see Garssen and van Laar (2010), Botting (2010, 2012), van Eemeren (2012), and also Chap. 10, "The Pragma-Dialectical Theory of Argumentation" of this volume.

Lumer contrasts the epistemological approach with are of poor epistemic quality and limited scope of validity. Scholars taking an epistemological approach aim at developing a set of *objective* criteria for good argument, i.e., for deciding whenever a certain belief that functions as a standpoint or as an argument can be called a *justified belief*. These objective criteria are based on philosophical insights concerning the acquisition of knowledge and the rational justification of beliefs, and they pertain to various factors that are relevant to the process of knowledge improvement. The scholars involved distinguish four such factors and thus propose four types of criterion: “gnostic,” “plausibilist,” “prosbatic,”³⁴ and “responsibilist” ones. We briefly discuss these different types of criterion.

Gnostic criteria define justified belief in relation to the addressee of the argumentation. An example of a set of gnostic criteria is the following: “An argument is a good argument for person S if and only if (i) S is justified in believing the conjunction of all the premises in the argument, (ii) S is justified in believing that the premises are “properly connected” to the conclusion, and (iii) the argument is not defeated for S.”³⁵

Plausibilist criteria define justified belief in relation to the premises themselves, that is, they describe the epistemic quality of the content and the relevance of the premises as such. For this reason, plausibilist criteria are sometimes called *structural* criteria. Examples of this type of criteria can be found in Siegel and Biro (1997) and Biro and Siegel (2006).

Prosbatic criteria address yet another factor relevant to achieving an improvement of the epistemic state or situation at hand, namely, the accessibility of the knowledge required for the addressee to believe the truth (or acceptability) of the premises as well as their relevance for believing the truth (or acceptability) of the conclusion. Prosbatic criteria are sometimes called *situational* criteria, because they define justified belief in relation to the situation in which the argumentation takes place, i.e., in relation to the addressee and the time when the claim is made. In general, “prosbatic criteria define ‘good argumentation’ as a quadratic notion: ‘to address argument *a* (with database *d*) at time *t* to person *s* is good argumentation’, where reference to the database may be omitted in case of certain arguments” (Lumer 2005, p. 195).³⁶

³⁴ The word “prosbatic” derives from the Greek *prosbatos* (accessible).

³⁵ The example as quoted by Lumer (2005, p. 198) stems from Feldman (1994, p. 179).

³⁶ According to Lumer, plausibilist and prosbatic criteria are both necessary in order to describe what makes up a good argument: “The structural, plausibilist criteria may be considered as defining an instrument, i.e. the argument, that *in principle* is apt to fulfill the standard function of argumentation. The situational, prosbatic criteria, on the other hand, can be seen as rules for using this instrument: In which (epistemic) situation can the instrument be used to really fulfill the standard function?” (2005, p. 196, original italics). Scholars in favor of a combination of the two types of criteria include Lumer (1990) and Johnson (2000).

Finally, *responsibilist* criteria address the epistemic responsibility of the arguer, i.e., the degree to which the arguer actually transfers the knowledge that he or she possesses to the addressee. Examples of this type of criteria can be found in Goldman (1994, 1999). Lumer (2005) explains the need for responsibilist criteria with regard to the evaluation of the argumentation process as an “interpersonal enterprise of knowledge improvement” (p. 198) in the following way: “If someone’s argumentation (addressed to another person) is, as the arguer knows, good for the addressee (the gnostic or plausibilist-prosbatic criteria are fulfilled) but not for the arguer (the responsibilist conditions are not satisfied) then the arguer must have some relevant information that the addressee does not have. To improve the addressee’s epistemic situation, the arguer should introduce this piece of information in the discourse and hence change his argument” (p. 198).

Several problems exist regarding the status as well as the use of these criteria for the evaluation of argumentative discourse. First, the gnostic and plausibilist criteria pertain primarily to argumentation as a product, whereas the probatic and responsibilist criteria pertain to argumentation as a process. Second, there is no agreement among scholars about the contents of the criteria of a certain type. And third, there is no agreement about which of the four types of criteria is to be used when evaluating argumentative discourse. Rather than providing a full-fledged theory of how to evaluate argumentative discourse, scholars representing the epistemological approach have proposed criteria for the evaluation of specific types of argument. Lumer (1990) and Feldman (1999) proposed epistemological criteria for deductive arguments; Lumer (1990), Feldman (1999), and Goldman (1999) for specific types of probabilistic arguments; Feldman (1999) for causal argumentation; and Lumer (1990) and Feldman (1999) for practical argumentation. Of a somewhat wider scope are works by Weinstein (2002, 2006) and Goldman (1999), who proposed criteria for the truth of scientific theories, and Freeman (2005a), who developed an epistemological theory of premise acceptability.

In proposing criteria for argument evaluation, scholars taking an epistemological approach to informal logic provide at the same time the building blocks for a theory of fallacies. Viewed in a very general way, fallacies are bad arguments, and in order to decide whenever an argument can be called a “bad argument,” one has to know under what conditions an argument can be called a “good argument.” Therefore, many approaches within the field of argumentation theory define fallacies as violations of certain norms, rules, standards, or criteria for good argument, and the epistemological approach is no exception: “According to the epistemological approach, fallacy theory is only the negative counterpart of the positive criteria for good argumentation. Fallacies, roughly, are arguments violating these standards” (Lumer 2005, p. 202).

Given that within the epistemological approach several different types of criteria for good argument have been developed, it is no surprise that the definitions of fallacies given within this approach vary accordingly. Reflecting the specific type of criterion they proposed, some scholars provide a *gnostic* definition of fallacies, others a *plausibilist* definition, and again others a

plausibilist-prosbatic one.³⁷ In a similar fashion as they went about with regard to the development of criteria for argument evaluation, scholars pursuing an epistemological approach to informal logic have described specific types of fallacies rather than provided a full-fledged fallacy theory. Fallacies that have been given special attention include the fallacy of begging the question, the argumentum ad hominem, the argumentum ad verecundiam, the fallacy of affirming the consequent, the argumentum ad ignorantiam, and the argumentum ad populum.³⁸

In concentrating on the development of criteria for good argument and related descriptions of fallacies, most scholars working within the epistemological approach do not pay much attention to two other important applications of argumentation theory: the *analysis* and the *production* of argumentative discourse. The tools proposed by Feldman (1999) and Lumer (2003) for the analysis concern the interpretation of concrete arguments in terms of ideal ones rather than the reconstruction of argumentative exchanges within specific communicative domains. The same limitation applies to the contributions from this background regarding the production of argumentative discourse. The instructions proposed by Lumer (1988) and Goldman (1999) concern only the conduct of truth-finding discussions. Epistemologically inspired instructions for the writing of argumentative texts or the conduct of discussions with a different aim than finding the truth still need to be developed.

A distinct epistemological approach is set forth in the work on informal logic of Robert C. Pinto. Pinto's publications can be categorized as belonging to epistemology, philosophy of mind, informal logic, and argumentation theory. His approach is exemplified in his philosophical analysis of warrants as material inferences, i.e., as inferences that are not valid by their logical form (Pinto 2006). Pinto singles out three questions about warrants that need to be answered:

1. What is the form of the statements that express warrants?
2. Which properties determine argument validity?
3. What are the properties of warrant statements that make them have normative force?

According to Pinto, the key virtue of valid arguments is not that they are *truth-preserving*, but rather that they are *entitlement-preserving*. An argument is entitlement-preserving when it is the case that if the premises of the argument can reasonably be assumed, it follows that the conclusion can reasonably be assumed. In his treatment of warrants, Pinto ties in with Toulmin's (2003) views on warrants and Hitchcock's (1985, 1998) views on enthymematic arguments and covering generalizations (see also Sect. 4.8 of this volume).

³⁷ According to Lumer (2005, pp. 202–203), Fogelin and Duggan (1987) as well as Goldman (1999) propose a gnostic definition of fallacies, Siegel and Biro (1997) a plausibilist definition, and Lumer (2000) a plausibilist-prosbatic one.

³⁸ See Lumer (2005, pp. 203–204) for references to works dedicated to these specific fallacies.

Pinto also published on other topics of informal logic, such as the force of reasons (Pinto 2009) and the communicative context of arguments (Pinto 2010). Together with Hansen, he edited a volume containing a selection of texts that document ancient and modern perspectives on fallacies (Hansen and Pinto 1995). A collection of Pinto's essays has been published under the title *Argument, Inference and Dialectic* (Pinto 2001).

7.7 Freeman on Argument Structure and Argument Acceptability

James B. Freeman has carried out influential and ambitious research in informal logic which centers around two themes. First, we discuss his views on the structure of argumentation at the macro level. Next, we provide an overview of his thoughts on argument acceptability.

In *Dialectics and the Macrostructure of Arguments*, Freeman (1991) proposes a theory of argument structure (as he calls it) that does not focus on the structure of the statements used in arguments, but on the way in which these statements combine into larger arguments. To the former structure, Freeman refers as the *microstructure* of arguments and to the latter as the *macrostructure* of arguments. The microstructure of arguments is, for instance, studied in deductive logic. An example of the value of microstructural analyses is that they may demonstrate the truth-functional validity of an argument by showing that it “follows” the rule of *modus ponens* or some other formally valid rule of inference. The macrostructure of arguments can be portrayed by means of diagramming techniques as developed in informal logic, using, for instance, trees, boxes, and arrows. Freeman notes that the value of macrostructural analyses is that they do not only apply to deductive arguments but to all kinds of argument. In his view, macrostructural analyses can be a helpful tool for the evaluation of arguments (1991, pp. xii–xiii).

A characteristic of Freeman's approach is that he examines argument structure in a dialogical setting. An argument gradually develops in a dialogue between persons, in which statements are made, questions are asked and addressed, and evidence is provided. In Freeman's view of argument as a dialectical process, the monological structure of an argument can be regarded as the product of an argumentative dialogue.

Freeman's approach is inspired by the model Toulmin proposed in *The Uses of Argument* (see Chap. 4, “Toulmin's Model of Argumentation” of this volume, in particular Sect. 4.8). In Freeman's terminology, Toulmin's model is an example of how the macrostructure of arguments can be analyzed. Freeman's dialogical interpretation naturally fits the legal context which inspired Toulmin to develop his model.

Freeman presents his approach to argument macrostructure by contrasting it with three rival approaches. The first one is the *premise-conclusion model* of argument macrostructure. The premise-conclusion model is associated with the macrostructure of arguments as it is conceived in deductive logic. Viewed from Freeman's

perspective, this model deals primarily with the microstructure of argument. According to him, the obvious usefulness of the argument diagramming methods as they are used and refined in informal logic is a sign that the premise-conclusion model is not the whole story. The second rival approach is what Freeman, referring to Beardsley (1950) and Thomas (1986), calls the *standard approach to argument diagramming*. He mentions the four macrostructural distinctions made in this approach: divergent, serial, convergent, and linked arguments (see Sect. 7.2). The third and final rival approach is the one proposed in the Toulmin model, which distinguishes data, claim, rebuttal, warrant, backing, and qualifier as macrostructural elements.

The main aim of Freeman's study is to further develop the macrostructural theory of argument by giving it a firmer theoretical basis by approaching the subject of argument structure from a dialectical perspective. According to Freeman, his approach may lead to an adequate assessment of competing approaches and a clarification of the relations and distinctions between macrostructural elements, in particular those between linked and convergent arguments.

Freeman distinguishes between a "dialogical" and a "dialectical" situation. A dialogical situation is a setting in which the participants engage in some sort of dialogue with each other to exchange their views concerning certain issues or for some other purpose. A dialogical situation is only dialectical when certain additional requirements are met. There should be some kind of opposition between the participants, the exchange must take the form of questions and answers, and the exchange should follow certain rules which define the roles of the participants and constrain how the dialogue proceeds. In these respects, Freeman's notion of a *dialectical situation* ties in with the notion of a *critical discussion* as developed by van Eemeren and Grootendorst (1984).

Freeman (1991, pp. 33–37) specifies several desiderata for argument diagramming techniques as well as for a theory of argument macrostructure. A diagramming technique should be generally applicable, straightforwardly applicable, and mirror the structure of real-life arguments. A theory of argument macrostructure should provide a rationale for recognizing the kinds of elements distinguished, which rationale should have a theoretical basis and be natural.

In Freeman's theoretical framework, three types of questions can be asked for "drawing out an argument from a proponent" (1991, p. 37). Questions of the first type concern the acceptability of the argument: "Why should I believe that premise?" and "How do you know that reason is true?" Questions of the second type are questions that concern the relevance of the argument: "Why is that reason relevant to the claim?" and "How do you get there?" The latter is the question Toulmin used to acquire the warrant of an argument. Questions of the third kind are *ground adequacy questions*: "Can you give me another reason?," "How sure do your reasons make you of the claim?," "Why do your premises make you so sure?," and "What might prevent you from getting there?" (pp. 38–39). Freeman connects his categories of questions to macrostructural elements. For instance, the relevance question "Why is that reason relevant to the claim?" is connected to the linked

argument structure. Freeman also makes comparisons with approaches by Grice (1975) and Rescher (1977). He draws parallels, for instance, with Grice's maxims of cooperation in rational discussions and Rescher's presentation of questions that arise in formal disputation (see Sect. 6.4).

Using this theoretical framework, Freeman argues that Toulmin's warrants should not occur in argument diagrams. When arguing for this position, he uses the distinction between argument as a process and argument as a product. Since a warrant is a natural answer to the question "How do you get there?," it has a distinct role when the whole process of the argumentative dialogue is considered. But whenever the argument is analyzed as a product, the distinct role of a warrant becomes less clear, since the analysis then abstracts from the warrant-generating question. Freeman concludes that warrants have a natural place in the process of argument, i.e., the argumentative dialogue, but not in the argument as product, i.e., not in the argument diagram.

A distinction made in the standard approach which is especially problematic is, according to Freeman, the one between linked and convergent arguments. The definitions of these notions are either merely intuitive or vague or ambiguous (1991, p. 97). On the basis of his theoretical framework, Freeman claims to have found a clear-cut distinction between the two. An argument has a linked structure "when two (or more) premises must be taken together [...] to see why we have one relevant reason for the conclusion" (p. 97). An argument has a convergent structure "when two or more premises are each independently relevant to the conclusion" (p. 97). Freeman considers the way he uses the notion of *relevance* in distinguishing between linked and convergent arguments to be better than the previous uses of *logical combination*, *fitting together*, and *filling logical gaps*. As a test of his proposal, he discusses the analysis of a number of example arguments that he considers problematic for the standard approach.

Freeman also addresses modalities and rebuttals as elements in an argument's macrostructure. He treats modalities as modifiers of the claim that is supported. For instance, the claim "John will come tomorrow" can be modified using the modality "probably," giving the modified claim "Probably, John will come tomorrow." Freeman recognizes that rebuttals deserve their own place in a system of macrostructural elements, also considering the fact that the number of rebuttals can be indefinite. In contrast to Toulmin, Freeman discusses the possibility of counterrebuttals (1991, pp. 164–165). He connects his discussion of rebuttals to Hart's (1951) notion of defeasible concepts. An example of a defeasible concept is that of a legal contract. The connection with arguments and their macrostructure is that for the establishment of the existence of a legal contract, it is necessary to consider the arguments for the existence of the contract but also the rebutting arguments challenging such existence.

Pragma-dialecticians (van Eemeren and Grootendorst 1992a; Snoeck Henkemans 1992) and Walton (1996b) have developed approaches to the structure of argumentation which are related to Freeman's dialectical account of the macrostructure of argument. Snoeck Henkemans (1992) critically discussed earlier

versions of Freeman's approach to macrostructure from a pragma-dialectical perspective. A point of critique expressed in a review of Freeman's book by Snoeck Henkemans (1994) is that the blurred distinction between linked and convergent arguments has become even more confusing in Freeman's approach, since arguments can now be modally linked and convergent at the same time (pp. 320–321).

Freeman's approach has been taken up by developers of argumentation support software, specifically by Reed and Rowe (2004).³⁹ In 2011, Freeman published an adapted and extended version of his views concerning the macrostructure of argument, tying in with Wigmore's (1931) argument diagramming method and Pollock's (1995) inference graphs.⁴⁰ Other additions are that Freeman (2011) addresses criticisms made by Snoeck Henkemans (1994) concerning the distinction between convergent and linked arguments and criticisms by Walton (1996b) concerning the need for a further analysis of the notion of relevance.

Next to his work on the structure of argumentation at the macro level, Freeman (2005a) also published a monograph titled *Acceptable Premises: An Epistemic Approach to an Informal Logic Problem*. The aim of this study is answering the question when premises can be deemed acceptable, and this subject matter is treated almost entirely independent from Freeman's views on argument macrostructure. Freeman discusses a number of popular criteria for premise acceptability according to which a statement is acceptable if and only if it is (a) true, (b) known to be true, (c) accepted, (d) accompanied by argument, or (e) probable (pp. 10ff). Each of these criteria is dismissed by him. Inspired by Cohen's (1992) idea that presumptions may be taken for granted when there are no reasons against doing so, Freeman (2005a, p. 21) proposes as a criterion for acceptability that "a statement [such as a premise] is acceptable just when there is a presumption in its favor." His proposal closely relates to the idea of argument defeasibility (see also Sect. 11.2).

Referring to Plantinga (1993), Freeman (2005a, p. 44) discusses how statement acceptability and presumption depend on four conditions: (1) the mechanism generating the belief in the statement must function properly; (2) it must operate in a proper environment; (3) it must be a mechanism aimed at the truth; and (4) it must be reliable. As a further condition of statement acceptability, Freeman (pp. 62–63) adds a refined version of the pragmatic condition that there must be a balance between the cost of being wrong and the cost of obtaining further evidence.

Freeman notes that the idea of presumption is well known from the courtroom setting, where the specific division of the burden of proof determines which party must defend which claim. Similar to his approach of argument structure is that he describes presumption against a dialectical background. Freeman distinguishes statements according to their being "logically determinate," "descriptive," "interpretative," or "evaluative." He connects these distinctions to personal

³⁹ For Freeman's response to Toulmin, see Sects. 11.4 and 11.10 of this volume.

⁴⁰ See also Sect. 11.2 of this volume on Pollock's undercutting and rebutting defeaters.

belief-generating mechanisms: a priori intuition leads to logically determinate statements; perception, introspection, and memory lead to descriptions; physical, personal, and institutional intuition result in interpretations (e.g., causal statements, ascriptions of belief or intention, semantic rules); and moral intuition results in evaluations. Testimony is discussed as an interpersonal belief-generating mechanism.

In his paper “Systematizing Toulmin’s Warrants: An Epistemic Approach,” Freeman (2005b) relates his view on warrants to that on acceptable premises. Distinguishing warrants on the basis of the way in which they are discovered and justified, he arrives at a fourfold classification. This classification strongly resembles the classification system he used in his work on acceptable premises: Warrants can be a priori, empirical, institutional, or evaluative.

An extensive and careful review of Freeman’s book on premise acceptability has been given by Krabbe (2007). He connects Freeman’s approach to Hamblin’s position that a statement is acceptable if and only if it is accepted and to the pragma-dialectical idea that the discussants agree on the basic premises in the opening stage of a discussion. He also explains why the epistemological, normative goals of Freeman’s project are relevant for argumentation theorists: When argumentation theory is applied to the evaluation or construction of a specific argument, a judgment about the general acceptability of the argument’s premises is important, and such judgment is supported by a good understanding of normative foundations (Krabbe 2007, p. 109).

7.8 Walton on Argumentation Schemes and Dialogue Types

Douglas N. Walton is an exceptionally prolific author who has authored a great many books and papers. His early theoretical studies on the fallacies conducted in collaboration with John Woods were published in 1989 as *Fallacies: Selected Papers 1972–1982*. Gradually Walton’s theoretical perspective developed from a mainly logical one to a dialectical and to some extent also pragmatic perspective. The focus of his research concentrated over time strongly on two themes: argumentation schemes (as he calls them) (e.g., Walton 1996a; Walton, Reed and Macagno 2008) and dialogue types (e.g., Walton and Krabbe 1995; Walton 1998). Walton also published a textbook on informal logic (Walton 1989, 2008a). In addition, he has written studies on argumentation structure (Walton 1996b) and specific types of argument, such as appeal to expert opinion (Walton 1997). More recently, Walton has become ever more connected with the field of artificial intelligence, especially in its applications to law (e.g., Walton 2008b; Gordon et al. 2007).⁴¹ In this section, we will first discuss Walton’s work on argumentation schemes and then describe his approach to dialogue types.

⁴¹ See also Chap. 11, “Argumentation and Artificial Intelligence”, in particular Sects. 11.5 and 11.6, of this volume.

According to Walton, Reed, and Macagno (2008) in *Argumentation Schemes*, “argumentation schemes are forms of argument (structures of inference) that represent structures of common types of arguments used in everyday discourse, as well as in special contexts like those of legal argumentation and scientific argumentation” (p. 1). Among the schemes they list are the familiar deductive and inductive forms of argument but also defeasible, presumptive, and abductive forms that are neither deductive nor inductive. The authors explain that such argument forms used to be viewed as fallacious but can now be treated as reasonable forms of argument which can be defeated in the face of counterargument. Such counterarguments often arise in considering the critical questions associated with the argumentation scheme at issue. The claim, for instance, that John was at the crime scene can be supported by Mary’s testimony that she saw him there. Such an argument is defeasible, since Mary might be mistaken or untruthful. The task for argumentation theorists is to determine the form of such arguments, in this case arguments using a witness’s testimony, and list the critical questions associated with it.

Under 60 headings, Walton, Reed, and Macagno (2008, Chap. 9) present a list of argumentation schemes, almost all of them collected from the existing literature.⁴² According to the authors, recognizing the importance and legitimacy of defeasible argumentation has led to a paradigm shift in logic, artificial intelligence, and cognitive science (2008, p. 2). Instead of considering defeasible arguments as inherently fallacious, there was a growing understanding that we need such arguments and that it depends on circumstances whether their use is in place or not. The critical questions associated with an argumentation scheme are an important tool to test the defeasible support provided by a given argument, in which the scheme is applied.

The method of studying defeasible argumentation schemes with a matching set of critical questions Walton, Reed, and Macagno attribute to Hastings’s (1963) dissertation. In the method, the idea underlying the evaluation of an argument is that an argument can be defeated when its proponent does not answer the opponent’s critical questions. After some time, the argumentation community started to take up this approach (e.g., Kienpointner 1992; Grennan 1997; see also Garssen 2001). In a historical chapter, Walton, Reed, and Macagno discuss connections with Aristotle’s notion of a *topic* and (briefly) with Perelman and Olbrechts-Tyteca’s notion of *argumentative schemes*, Toulmin’s notion of a *field*, and the pragma-dialectical notion of *argumentation types* (referring to van Eemeren and Kruiger 1987).

As an example of an argumentation scheme, we take the first scheme listed in Walton, Reed, and Macagno’s “compendium of schemes” called the *argument from position to know* (2008, p. 309, see also pp. 13ff). The authors explain that an argument from position to know is based on the common situation that someone has information or knowledge that is useful for someone else, for instance, when the other asks the way to the station when he is lost. However, when asking the way to the

⁴² The list draws on the list presented in Chap. 3 of Walton’s (1996a) *Argumentation Schemes for Presumptive Argumentation*, which counts 25 headings, and mentions references for each scheme (most of them to other publications by Walton, some to work by other researchers).

station, it is assumed that the person queried does know the way to the station, which can be a wrong assumption. Walton, Reed, and Macagno present the following scheme for the argument from position to know (referring to Walton 2002b, p. 46):

Argument from position to know

Major premise	Source <i>a</i> is in the position to know about things in a certain subject domain <i>S</i> containing proposition <i>A</i>
Minor premise	<i>a</i> asserts that <i>A</i> is true (false)
Conclusion	<i>A</i> is true (false)
Critical question 1	Is <i>a</i> in position to know whether <i>A</i> is true (false)?
Critical question 2	Is <i>a</i> an honest (trustworthy, reliable) source?
Critical question 3	Did <i>a</i> assert that <i>A</i> is true (false)?

The major premise expresses the background situation that someone, the source *a*, is in a relevant position to know. The minor premise expresses that the source actually asserts relevant knowledge, e.g., that *A* is true. The defeasible conclusion is then that *A* is indeed true. The critical questions list possible situations in which that conclusion can be drawn mistakenly: when the source may not really be in a relevant position to know, may be dishonest, or may not have made the assertion at all.

The pattern of most argumentation schemes is similar to that of modus ponens, “with something defeasible acting as the major premise” (Walton et al. 2008, p. 16). In the example that is provided, the source is in the position to know but may still make a wrong assertion. Major and minor premise must be considered as linked premises, not convergent premises.

Argumentation schemes also are useful as pedagogical tool for training critical skills. The schemes and the associated critical questions can be of help in identifying and evaluating arguments (Walton et al. 2008, p. 21). The flexibility of the schemes as opposed to the tools of formal logic comes in handy. In a teaching context, it is also helpful that argumentation schemes can be associated with diagramming techniques and associated software tools (see also Sect. 11.10 of this volume).

Walton, Reed, and Macagno also mention some problems of the argumentation schemes approach (2008, p. 31). Among the issues they note are the normativity and completeness of schemes: How is a scheme binding, if at all? When is a scheme complete? Can more critical questions be asked than those listed?⁴³

Walton, Reed, and Macagno (2008, p. 309) note that the counting of argumentation schemes is somewhat arbitrary. This arbitrariness is illustrated by the fact that in their introduction, they announce having 65 schemes (p. 4), whereas their compendium uses 60 headings. They also say that Walton (1996a) gives 26 schemes (2008, p. 3), while the list in his book uses 25 headings. As acknowledged by the authors, the differences in number seem to be a side effect of the lack of fixedness of the units that are counted. Some schemes, for instance, have several variations or sub-schemes. When should variations or sub-schemes be counted as separate schemes? Walton, Reed, and Macagno’s answer is that the number of schemes does not matter as much as the

⁴³ Attempts have been made to further systematize the list of argumentation schemes and the associated critical questions, for instance, in the field of artificial intelligence (see Sect. 11.5 of this volume) and in a pragma-dialectical fashion (Wagemans 2011b).

classification project itself (p. 309). They propose (in Chap. 10, “The Pragma-Dialectical Theory of Argumentation”) a classification system using three broad headings: reasoning, source-based arguments, and applying rules to cases. Each broad heading has a number of subcategories, which in turn have the schemes themselves as members. The broad heading “reasoning,” for instance, has among others “deductive reasoning,” “inductive reasoning,” and “causal reasoning” as subcategories, with the schemes “argument from cause to effect” and “argument from correlation to cause” as members for the last subcategory. The authors connect their work strongly with developments in artificial intelligence, especially with regard to the formalization of schemes (in their Chap. 11, “Argumentation and Artificial Intelligence”) and the use of schemes in computer systems (in their Chap. 12, “Research in Related Disciplines and Non-Anglophone Areas”).⁴⁴

The second main theme in Walton’s research program to be discussed concerns the dialogue types. In *Informal Logic*, Walton (1989) proposes a list of dialogue types (based on research with Krabbe), characterizing them by their initial situation, method, and goal. The list consists of nine types: *quarrel*, *debate*, *persuasion* (*critical discussion*), *negotiation*, *information-seeking*, *action-seeking*, and *educational* (p. 10). An inquiry dialogue, for instance, has a lack of proof as its initial situation, uses knowledge-based argumentation as a method, and has the establishment of proof as a goal. Later, Walton and Krabbe (1995, Chap. 3, survey on p. 66) published the original version of their typology of dialogues consisting of six main types (*persuasion*, *negotiation*, *inquiry*, *deliberation*, *information-seeking*, and *eristics*) and some mixed types (*debate*, *committee meeting*, *Socratic dialogue*). In Table 7.1, a recent version of the typology is reproduced (Walton 2010). The list consists of seven types, since a dialogue type called *discovery*, attributed to McBurney and Parsons (2001), is added to the six types just mentioned.

Walton (1998) defines a dialogue as “normative framework in which there is an exchange of arguments between two speech partners reasoning together in turn-taking sequence aimed at a collective goal” (p. 30). In his view, arguments can correspond to appropriate moves in a dialogue. There is a main goal, the goal of the dialogue, and there are goals of the participants. The two kinds of goals may or may not correspond. Dialogues can have side effects and benefits. In the 1995 typology by Walton and Krabbe, for instance, side benefits include the development and revealing of positions, the adding to prestige, and the venting of emotions. There are subtypes of the dialogue typology: Inquiry, for instance, can be a process of scientific or of public investigation (Walton and Krabbe 1995, p. 73), and information-seeking can take place in a didactic dialogue, an expert consultation, an interview, or an interrogation (pp. 75–76).

A special topic associated with the typology is the study of dialogical shifts, which occur when a dialogue moves from one type (or subtype) of dialogue to another. Dialogues can be genuinely mixed, when eristic is mixed, for instance, with deliberative dialogue, as in a quarrelsome discussion about where to go on holiday, but there

⁴⁴ See also Chap. 11, “Argumentation and Artificial Intelligence”, in particular Sects. 11.5 and 11.10 of this volume.

Table 7.1 Typology of argumentative dialogues

Type of dialogue	Initial situation	Participants' goal	Goal of dialogue
<i>Persuasion</i>	Conflict of opinions	Persuade other party	Resolve or clarify issue
<i>Inquiry</i>	Need to have proof	Find and verify evidence	Prove (disprove) hypothesis
<i>Discovery</i>	Need to find an explanation of facts	Find and defend a suitable hypothesis	Choose best hypothesis for testing
<i>Negotiation</i>	Conflict of interests	Get what you most want	Reasonable settlement both can live with
<i>Information-seeking</i>	Need for information	Acquire or give information	Exchange information
<i>Deliberation</i>	Dilemma or practical choice	Coordinate goals and actions	Decide best available course of action
<i>Eristic</i>	Personal conflict	Verbally hit out at opponent	Reveal deeper basis of conflict

is also the possibility of a genuine shift, when one type of dialogue ends and another starts, as when, feeding on old personal conflicts, a normal discussion about where to go on holiday shifts into a quarrel. Dialogue shifts are connected to fallacies, since dialogue shifts can be “licit” or “illicit” (legitimate or not). A licit shift occurs, for instance, when a deliberative dialogue about where to go on holiday shifts to an information-seeking dialogue about the weather conditions in a certain country and then back to the deliberation dialogue.

For Walton, his new dialectic is closely related to the problem of argument evaluation and the study of informal fallacies. We already mentioned the connection between dialogue shifts and fallacies. In Walton (1998, pp. 249–252), a four-step method for argument evaluation is proposed that connects the typology of dialogues with argumentation schemes. The goal of the method is to make it possible to establish whether an argument is used reasonably or not. In step 1, the argument is identified. This is where premises and conclusions are determined – here the argumentation schemes are useful. At step 2, the context of dialogue is identified. This concerns the dialogue typology: “What is the initial situation?” and “What is the goal?” Step 3 concerns the burden of proof: “What is the burden of proof?” and “Is the argument deductive, inductive, or presumptive?” At step 4, specific criticisms are evaluated, such as relevance problems and questionable use of emotional appeals.

According to Walton and Krabbe (1995, p. 174), their approach helps in addressing a major problem in the logical evaluation of argumentation in natural language conversation: that systems of logic are in contrast with the “permissive, free flow of ordinary conversation,” rigorous, and precise. Walton and Krabbe aim for a middle way, in which dialogue modeling is central. They aim for systems with four desirable features: Dialogue systems should be (1) realistic, (2) have a normative bite, (3) be rigorously formulated, and (4) be easy to apply in ordinary contexts (1995, p. 175). As Walton and Krabbe observe, (2) and (3) pull away from the natural language situation, whereas (1) and (4) pull toward it.

7.9 Hansen on Fallacy Theory, Methods, and Key Concepts

Hans V. Hansen is an informal logician whose research has concentrated on two main themes: (the history of) fallacy theory and the study of methods and key concepts of informal logic.⁴⁵

An important contribution to the study of fallacies is the influential *Fallacies: Classical and Contemporary Readings*, coedited by Hansen and Pinto (1995). In their introduction to the historical selections (Part I of the book), Hansen and Pinto sketch much of the history of fallacy theory. The volume also contains a select bibliography, which lists important articles and books about the fallacies and fallacy theory published between the beginning of the 1960s and the mid-1990s. Apart from this edited book, Hansen has (co)authored a number of articles on historical approaches and definitions of fallacies. Aristotle's views on the fallacies have his special interest.

In an article written together with John Woods, Hansen criticizes Jaakko Hintikka's proposal of interpreting Aristotle's fallacy theory in light of an interrogative theory of reasoning (Woods and Hansen 1997).⁴⁶ Woods and Hansen (1997) state that "Hintikka's approach to the Aristotelian fallacies as found in *De sophisticis elenchis* fails to capture not only Aristotle's motivation but also the essential character of Aristotle's view" (p. 217). According to them, Hintikka downplays the logical character of Aristotle's concept of fallacies:

[...] according to Hintikka there is a sense in which 'all Aristotelian fallacies are essentially mistakes in questioning games, while some of them are accidentally mistakes in deductive (more generally, logical) reasoning'. (Hintikka 1987, 213) We hold the opposite view: all Aristotle's fallacies are essentially logical mistakes and only accidentally mistakes of questioning. Whereas Hintikka emphasizes the importance of questioning in dialectical games, and hence attempts to understand the fallacies in such a framework, our interpretation holds that the framework for the analysis of fallacies is more closely related to a particular theory of refutation than it is to a general theory of questioning; and, since the elements of the theory of refutation are primary logical, that the fallacies are of an essentially logical character. (Woods and Hansen 1997, pp. 217–218).

In another article on the theory of fallacies, Hansen (2002b) investigates whether there is any support for Hamblin's view that the "standard definition of fallacy" is that a fallacy is an argument that seems valid but is not.⁴⁷ Having explored some of the most important historical conceptions of fallacies, such as those of Aristotle, Whately, Mill, and De Morgan, Hansen concludes that "there is scarcely any

⁴⁵ Hansen has also played an important editorial and organizational role in the informal logic movement. Apart from having published a bibliography of informal logic (1990), he is one of the editors of the journal *Informal Logic* and co-organized nine conferences of the Ontario Society for the Study of Argumentation (OSSA).

⁴⁶ For an exposition of Aristotle's theory of fallacies, see Sect. 2.4 of this volume.

⁴⁷ For an explanation of Hamblin's influential view on fallacies, see Sect. 3.6 of this volume.

support for Hamblin's view that this particular definition of 'fallacy' was widely held" (2002b, p. 133).

Whately's views on authority arguments are the subject of a paper by Hansen from 2006. In the paper, Hansen attempts to find an explanation for the fact that the treatment of arguments involving authority (the *argumentum ad verecundiam*) is so different in Whately's *Elements of Logic* and his *Elements of Rhetoric*. One possible explanation, according to Hansen, is that Whately thought that authority argumentation and the *ad*-arguments in general were less interesting from the point of view of logic:

Whately appears to have thought that the importance of the concepts of authority, presumption and deference are more usefully brought out by rhetorical theory than by logic, and that the analysis of fallacies belongs more to logic than it does to rhetoric. (2006, p. 337).

A second branch of Hansen's research consists of contributions to discussions about key issues in informal logic. A case in point is Hansen's (2002a) exploration of the various definitions of the notion of *argument* that can be found in the works of informal logicians and argumentation theorists and his comparison of these definitions with the definition of *argument* presented in Johnson's (2000) *Manifest Rationality*.

Another example of Hansen's contribution to the conceptual discussions within informal logic is his views on a particular type of *conductive* argument: the *balance-of-consideration* argument (Hansen 2011b). This type of argument typically consists of a combination of pro- and con-arguments, and Hansen analyzes the status of counterconsiderations. He thinks that counterconsiderations should not be seen as premises but require the addition of an "on-balance premise," in which they are said to be outweighed (p. 40).

In the first part of the twenty-first century, Hansen devoted a number of publications to the question of which methods are available to informal logicians for the evaluation of natural language arguments (Hansen 2011a, 2011c). In Hansen (2011a) he develops a framework that can be used to establish which (formal or informal) method of evaluation can best be used to teach logical novices how to evaluate natural language arguments. In Hansen (2011c) he discusses the usefulness of Walton's (1996a, 2006) "argumentation scheme method" for the evaluation of natural language arguments (see Sect. 7.8 of this volume for a discussion of Walton's views on argumentation schemes).

According to Hansen (2011c), unlike other methods of evaluation, the argumentation scheme method has the following three characteristics: It allows for a *direct evaluation* (an evaluation that does not require a comparison with another argument), it is *bipolar* (can both produce the result that the argument is strong and that it is weak), and it can be used to give judgments of *intermediate strength* (p. 744). Hansen believes, however, that in its present state, the argumentation scheme method proposed by Walton is "severely limited in scope" (p. 745). This is because, in Walton's approach, the standards for the evaluation of argumentation are said to depend on the dialogue type in which the argument is put forward, without providing a specification of these different standards of evaluation. The only standards that have been

presented so far are those for the persuasion dialogue. A second problem Hansen mentions is that Walton's exposition of argumentation schemes is as yet not consistent. For instance, not every scheme contains a presumptive generalization. For reasons such as these, Hansen considers the argumentation scheme method for evaluating arguments "a method still under construction" (p. 748). Together with Walton, he started a project in which the kinds of arguments used by politicians standing for office in Canadian elections are studied (Hansen and Walton 2013).

7.10 Hitchcock's Contributions to Informal Logic

In his studies, David Hitchcock has treated a diversity of topics in informal logic, each study being characterized by precision, scholarliness, and careful thinking. We first discuss his general perspective on informal logic as a field. Then we provide an overview of his views on Toulmin's notion of warrant, on argument evaluation, and on inference claims. We conclude with a description of Hitchcock's attempts to use empirical means in addressing questions from informal logic and of his contributions to bridging the divide between informal approaches and formal or computational approaches to argument.

In a chapter of a handbook on philosophical logic, Hitchcock (2006b) identifies the field of informal logic as aimed at identifying, analyzing, evaluating, criticizing, and constructing arguments. Argument identification, analysis, evaluation, and criticism were the topics proposed by Johnson and Blair (2000) as distinguishing the field. Hitchcock adds the topic of argument construction. According to him, the term *informal logic* is slightly unfortunate because, since for many "logic" implies something "formal," the term will for them constitute a contradiction in terms. Although the tension involved in the term may be contributing to its intuitive appeal and marketing value, Hitchcock emphasizes that one should not think that informal logic aims to exclude formal methods, such as those provided by formal logic. The contrast with formal logic stems from the different topics that are addressed by informal logic. As a better term Hitchcock suggests *theory of argument*.

In Hitchcock (2006b) the focus is on argument as discourse in which a point of view is supported by offering one or more reasons. In saying that arguments are invitations to make an inference, Hitchcock refers to Pinto. By means of an argument, the addressee of the argument is invited to accept the conclusion because of the premises. Elementary arguments have a premises-illative-conclusion structure, the illative being an expression such as "so" or "since" that indicates the conclusion or the reason or reasons. The illative "so" is of the conclusion-indicating kind, while the illative "since" is a premise indicator. Using Searle's classification of speech acts, according to Hitchcock, premises can be analyzed as assertives and conclusions as assertives, directives, or possibly even other kinds of speech acts. In Hitchcock's diagramming method, complex arguments are built from elementary ones, including the possibility of suppositional arguments, which

is, for instance, required for *reductio ad absurdum*. Insinuation is an example of a form of communication that, according to Hitchcock's treatment, is not argument. In a situation of insinuation, the addressee is invited to draw a conclusion, but not on the basis of the words themselves that are uttered. An insinuation is perhaps more a suggestion to make the addressee construct an argument, without presenting the argument itself.

A specific topic Hitchcock's research concentrates on is Toulmin's notion of "warrant." Hitchcock (2003) defends the idea that a warrant is not to be regarded as a premise of a specific kind, but as an inference license (see also Sect. 4.8 of this volume). According to him, Toulmin's notion of warrant has parallels with what C.S. Peirce called "leading principles" of a class of reasoning, with J.L. Pollock's "reason schemes" (see Pollock's list of classes of specific reasons given in Sect. 11.3 of this volume), and with the concept of "argumentation schemes," which Hitchcock ascribes to Perelman and Olbrechts-Tyteca (1969) (see also Sect. 7.8 of this volume). According to Hitchcock, there are a number of common misconceptions of Toulmin's notion of a warrant. In his interpretation, a warrant is not to be viewed as a kind of premise, not even as an implicit premise, and neither as an ungeneralized indicative conditional.

Hitchcock takes a position in the discussion of objections to the notion of a warrant that has been raised in the literature. For instance, van Eemeren, Grootendorst, and Kruiger (1984, p. 205) argue that it can be difficult in practice to distinguish data from warrants. Toulmin's supposedly warrant-generating question "How do you get there?" can also sometimes be answered by a data-like singular statement, while the data-generating question "What have you got to go on?" can occasionally lead to an answer that takes the form of a warrant-like general statement. A related objection has been made by Freeman (1991) about generalized conditionals in a premise-like position (see Sect. 7.7). Hitchcock uses a sample of 50 arguments to establish whether it is in practice difficult to distinguish data from warrants, finding that in only one of the 50 randomly selected arguments, it was hard to make that distinction (Hitchcock 2003, p. 74).

Another objection by Freeman is by Hitchcock taken to be a strong one: Warrants are not part of arguments as products, hence not a part of diagrammed arguments. In a diagram, the warrant is implicit. Hitchcock also emphasizes Freeman's point that a reasoner need not consciously know the rules used in his reasoning. Another objection accepted by Hitchcock is Johnson's point (1996) that warrants do not always clearly belong to a field. As a result, it would be fair to give up Toulmin's strong field-dependency thesis.

Using Toulmin's model as a background, Hitchcock (2005a) addresses the issue of good reasoning. He distinguishes four conditions that together determine whether reasoning is good:

1. The reasoning's grounds are justified.
2. The reasoning's grounds are adequate.
3. The reasoning's warrant is justified.
4. The reasoner is justified in assuming that no defeaters apply.

As to condition (1), Hitchcock distinguishes seven categories that he considers most trustworthy as sources of justified grounds: direct observation, written records of direct observation, memory of what one has previously observed or experienced, personal testimony, previous good reasoning or argument, expert opinion, and appeal to an authoritative reference source. In condition (2), the adequacy of the reasoning's grounds means that all good, relevant information that is practically obtainable is taken into account. With regard to condition (3), Hitchcock follows Toulmin. He considers warrants to be general, but they need not be universal, as they allow for modal qualifications and the arguments based on them can be defeasible. When a warrant is used in reasoning, it must be applicable, which can be determined by considering the antecedent of the conditional associated with a warrant. The warrant must also be justified, by having a backing. Finally, condition (4) for good reasoning is that the reasoner must be justified in assuming that no defeaters apply. More generally, one must know of no exception to the warrant. Also, if one does not know of such an exception, one should take reasonable effort to find one. According to Hitchcock, "if one knows of no exception and one's pragmatically justified investigation has not discovered an exception, one can draw one's conclusion *as if* there is no exception" (2005a, p. 388, original italics).

Hitchcock's interest in warrants as inference licenses is connected to his position on the nature of inference claims. He rejects the view, associated with classical formal logic, of inference claims as being based exclusively on formally necessary truth preservation (Hitchcock 2011b). Hitchcock construes an approach that does justice to two objections to this formal view: (1) Inference claims cannot be good simply on the basis of a formal property of the premises (ruling out that they are all true) or on the basis of a formal property of the conclusion (ruling out that it is false), and (2) there exist inference claims that are good because of properties that are not purely formal. The approach he proposes is based on generalizations that cover an inference claim.

An interesting aspect of Hitchcock's work is that he has taken serious steps to give his theoretical positions an empirical foundation. His classification of seven sources of justified grounds, for instance, has in part been derived from his study of how arguments are used in medical discourse (Jenicek and Hitchcock 2005; see also Jenicek et al. 2011). In addition, he has attempted an innovative empirical methodology for the collection of an objective set of arguments.⁴⁸ The following quote gives an impression of his method:

We selected at random a starting-point within the first 50 lines of each of the first 500 pages of the English-language books catalogued in the libraries of McMaster University. The computerized database of the university's library holdings contained at the start of the

⁴⁸ Hitchcock's interest in argumentation is clearly not just academic, but also inspired by social and political values: "Free and open rational discussion, welcoming criticism and willing to change in the light of that criticism, is the most secure route to correct views and wise policies" (2002b, p. 298).

project 1,204,802 entries numbered sequentially. A random number generator was used to generate numbers between 1 and 1,204,802 which were used to identify the work from which a selection was to be made. It was then used to generate a random number between 1 and 500, for the starting page, and then a random number between 1 and 50, for the starting line. [...] If at any of these three stages of selection an unacceptable or non-existent item was selected, then the search was stopped at this point and the next number pursued. The search stopped at the first stage if the work selected was not an English-language publication or was a periodical. It stopped at the second stage if the page number selected was greater than the number of the last page in the work. It stopped at the third stage if the line number selected was greater than the number of the last line on the page. (Hitchcock 2002c, pp. 1–2).

The result of applying this method is a sample of objectively and randomly selected arguments which can be considered to be a representative sample of arguments appearing in English-language university library books. Hitchcock used the sample to test certain hypotheses concerning arguments. One of his findings, that formally valid arguments are rather rare, provides an empirical underpinning to one of the key intuitions underlying the field of informal logic. Another finding, also fitting the program of informal logic, is that the evaluation of an argument often requires substantive expertise related to the context in which the argument appears.

Hitchcock has also contributed to establishing links between informal approaches and formal/computational approaches to argument (see also Chap. 11, “Argumentation and Artificial Intelligence”). In collaboration with others, he has, for instance, focused on decision support for reasoning about what to do (Girle et al. 2004) and developed a formalized model of deliberation dialogue (McBurney et al. 2007).

7.11 Tindale's Rhetorical Approach

Since the end of the 1990s, Christopher W. Tindale has been advocating a rhetorical approach to argumentation. In 1999, he published the monograph *Acts of Arguing: A Rhetorical Model of Argument*, followed in 2004 by *Rhetorical Argumentation: Principles of Theory and Practice*.⁴⁹ Tindale believes that the rhetorical perspective on argumentation has been the most overlooked angle in modern argumentation theory. In his view, this perspective should be synthesized with logical and dialectical perspectives (1999, p. 207). Since he considers the rhetorical perspective as the most fundamental, Tindale defends the point of view that the synthesis of the three perspectives should be grounded in the rhetorical perspective:

The thesis to be elaborated and defended is that the most appropriate synthesis of the main perspectives in argumentation theory is one grounded in the rhetorical. [...] the rhetorical approach avoids the shortcomings of the logical and the dialectical. But in its own right, with its focus upon the contexts in which argumentation occurs and the personalities of

⁴⁹ A more recent publication is *Reason's Dark Champions: Constructive Strategies of Sophistic Argument*, in which Tindale (2010a) analyzes the Sophists' strategies of argumentation.

those who argue and consume arguments, a rhetorical model of argumentation offers the most complete and satisfying account of what arguing *is*, of what it is like to be engaged in argumentation, to be argued to, and to evaluate arguments. (1999, pp. 6–7).

In an attempt to arrive at an account that allows for a contextualized, audience-oriented approach to argumentation, which at the same time avoids a deep relativism, Tindale (1999, p. 17) proposes a further development and adaptation of a number of central notions of Perelman and Olbrecht-Tyteca's new rhetoric (see Chap. 5, "The New Rhetoric").

Characteristic for rhetorical approaches such as Perelman and Olbrechts-Tyteca's new rhetoric is the central role accorded to the audience. Tindale (1999) thinks that there are also other important contextual components that should be taken into account in a rhetorical perspective (p. 75). One such component is *locality*: "the time and the place in which the argument is located" (p. 75). Another one is *background*: "those events that bear on the argumentation in question" (p. 76). A third contextual component is the *arguer*, the source of the argumentation (p. 77). And a fourth contextual component Tindale distinguishes is *expression*: the way in which the argument is expressed (p. 80).

According to Tindale (2006), in many (rhetorical and dialectical) approaches to argumentation, the arguer is considered most important for the way the argumentation is understood, instead of the audience. To do justice to the fundamental role of the audience in argumentation, he proposes an analysis of argumentative discourse in terms of Bakhtin's (1981, 1986) notion of *addressivity*: "the ways in which words used in utterances, in their very structure, both address and anticipate a response" (Tindale 2006, p. 454)⁵⁰:

The arguer/audience imbalance that favours the arguer in so many ways (as the controller of intentions; as the active participant to the audience's passivity) is shown for what it is: misconceived and incorrect. Understanding any argumentation, including the intentions involved, must begin as much with the audience as the arguer. (2006, p. 454).

Tindale, like Perelman and Olbrechts-Tyteca, thinks that the audience is decisive not just for the analysis of argumentation but also for its evaluation. He proposes an adapted version of Perelman and Olbrechts-Tyteca's notion of *universal audience* as the standard for the reasonableness of argumentation. Perelman and Olbrechts-Tyteca's notion of universal audience has been criticized for being simply an idealization with no concrete application. To address this type of criticism, Tindale (1999) proposes to further develop the concept by giving an analysis of how the universal and particular audiences are related.

According to Tindale, universal audiences "can be constructed from particular ones by universalizing techniques that imaginatively expand audiences across cultures and time and apply notions like competence and rationality" (1999, p. 90). In his interpretation of Perelman and Olbrechts-Tyteca, "the universal audience is the universalization of the particular *in its context*" (p. 101, original italics).

⁵⁰ In Tindale (2004, pp. 89–114) a detailed analysis of Bakhtin's idea of dialogism is presented.

Reasonable attempts at gaining the adherence of the audience will therefore have to be acceptable to both the particular and the universal audiences:

To gain the adherence of an audience in a *reasonable* way [. . .], the argumentation must be contextually relevant (i.e., relevant to the audience in its particular context) and comprise premises that are acceptable to the particular audience *and* to the universal audience formed from it. (1999, p. 95, original italics).

An important element of contextual relevance (a precondition for the acceptability of argumentation) is audience relevance, “the relation of the information-content of an argument, stated and assumed, to the framework of beliefs and commitments that are likely to be held by the audience for which it is intended” (p. 102). For his characterization of audience relevance, Tindale makes use of Sperber and Wilson’s (1986) theoretical notion of “cognitive environment.” Since, according to Sperber and Wilson, human cognition is relevance oriented, anyone who knows an individual’s cognitive environment can infer what that individual is likely to take into account (Sperber and Wilson 1986, pp. 46–50). When people share a cognitive environment with others, they know what assumptions are mutually manifest to all. Such shared cognitive environments “tell us nothing about what people know or assume, but about what they could be expected to know or assume” (Tindale 1999, pp. 106–107). In Tindale’s view, audience relevance requires that a premise or argument be related to what an individual’s or group’s cognitive environment makes manifest (p. 112).

Although the relevance of argumentation to the audience is a necessary precondition for gaining the audience’s adherence to the thesis that is defended, it is not a sufficient condition:

Relevant argumentation may fail to gain adherence for a thesis because the statements, say, express values recognized by the audience but not wholly endorsed by them, or they are supported by authorities that the audience does not recognize. (Tindale 1999, p. 113).

The notion of cognitive environment can in Tindale’s view also be instrumental in determining what a particular audience will accept: “appealing to the cognitive environment of the audience allows us to look [. . .] at what they can be *expected* to know given the information and ideas that are readily available to them” (1999, p. 113, original italics).

Applying the audience’s standards of acceptance in attempting to gain the adherence for a thesis may result in relativism: What is reasonable depends on the audience that is being addressed. With the help of his adapted notion of universal audience Tindale believes this problem can be addressed:

The universal audience is not a model of ideal competence introduced into the argumentative situation from the outside. It is developed *out of* the particular audience and so is essentially connected to it. [. . .] In constructing the universal audience for an argument, we do not give up effectiveness. On the other hand, the universal audience, as a representation of reasonableness in the context, cannot value effectiveness over reasonableness. In this way manipulation is ruled out. Where scrutiny discovers it, the perspective of the universal audience rejects it, and the arguer who thinks in these terms will not use it. (1999, p. 117, original italics).

Tindale (2004, pp. 128–129) also claims that criticisms of the kind voiced by van Eemeren and Grootendorst (1995) that even with the introduction of the notion of universal audience the standard of reasonableness is extremely relative are unjustified. Van Eemeren and Grootendorst argued that the universal audience is a construct of the arguer and that, consequently, there can be as many definitions of reasonableness as there will be arguers. Tindale responds as follows against the charge of relativism:

It is not a matter of each arguer deciding the universal audience in some arbitrary way, such that there are as many universal audiences as there are arguers. It is a matter of the argumentative context dictating to the arguer how the universal audience can be conceived, and the respondent or particular audience playing a co-authoring role in that decision. The argumentative context imposes clear constraints on the freedom of the arguer. (2004, p. 129).

According to Schulz (2006), Tindale's defense of his criterion of reasonableness against the charge of relativism can only be successful if a weak concept of reasonableness is employed, in which reasonableness is viewed as arising from the practices of actual reasoners. A strong concept of reasonableness, however:

lays [...] claim to universality: it implies that certain standards of substantiation can be justified independently of any audience. Regarding arguments, this would mean that there are norms, goals, or values which can be justified independently of a given specific audience which is being addressed. (Schulz 2006, p. 470).

For this reason, Schulz does not see how taking the specific audience into account could ward off criticism of the relativistic character of the rhetorical criterion of reasonableness in the strong sense (p. 471).⁵¹

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⁵¹ A similar remark is made by Blair (2000, p. 200) in his review of Tindale (1999): “I have trouble understanding how the universal audience constructed out of the particular audience adds anything beyond the arguer's own sense of what it would be reasonable for that audience to accept in that cognitive environment.”

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8.1 The Development of Communication Studies and Rhetoric

Communication studies and rhetoric are, broadly speaking, concerned with the process of creating meaning by means of symbols.¹ The scope of communication studies and rhetoric is broader than just argumentation, but in the American tradition, argumentation has from the early beginning been one of the central objects of study.²

¹ Communication and rhetoric are related disciplines; some see them even as one and the same. In fact, communication theory is broader, ranging from interpersonal interaction to mass communication. Rhetoric has its roots in antiquity and is still firmly connected with these roots.

² In the United States, the National Communication Association (NCA), founded in 1914, is the largest national organization to promote scholarship and education in communication and rhetoric. The American Forensic Association (AFA) concentrates in particular on academic debate programs. Together, NCA and AFA organize a Biennial summer conference in Alta, Utah. AFA's journal *Argumentation and Advocacy* publishes articles on argumentation and debate. In other journals published by NCA, such as the *Quarterly Journal of Speech* and *Communication Monographs*, papers on argumentation appear also regularly.

The American tradition of communication studies and rhetoric encompasses different types of approaches to the study of argumentation. They have joint academic roots in debate and classical rhetoric, but do not share one specific theoretical perspective. There is neither a conceptual framework for the study of argumentation all scholars concerned use nor common agreement on definitions and methodology. In this chapter, we shall make clear that there are nevertheless a great many commonalities among the various approaches. These commonalities reflect the strong desire for shared starting points in the theorizing that is noticeable throughout the long history of reflection on the defining properties of argumentation and rhetoric in articles and books published in the field.

Communication studies and rhetoric both developed strongly in the early twentieth century, when there was a growing interest in the practical skills of debating and public speaking. This interest had two sources. First, there already existed a flourishing debate and eloquence tradition that was inherited from the precolonial British past. Second, there was a growing realization among leading intellectuals such as John Dewey (1859–1952) that public speaking is essential to effective citizenship (Dewey 1916). The transformation of the United States to a mass democratic society at the beginning of the twentieth century called for the education of citizens in rhetoric and argumentation that is required for active participation. Academic debate (intracollegiate at first, then intercollegiate) was seen as an important pedagogical device for practical training for careers in law, government, and politics. Argumentation was, more generally, seen as representing a body of vital citizenship skills.

In the early years of American communication studies, the interest in argumentation was purely practical; not much theory was developed. In defining argumentation in the textbooks, the authors often referred to the conviction-persuasion duality, a distinction appropriated from Enlightenment rhetorical theorists such as Campbell, Whately, and Priestly. Under the influence of what was then called *faculty psychology*, the human mind was thought to be divided into different domains with discrete functions. Reason and emotion were thus dichotomized, and even seen as hostile forces, contending for supremacy. Convincing was conceived as pertaining to beliefs acquired by logical reason and considered to be rational; persuading as pertaining to beliefs based on appeals to emotion and considered to be irrational.

In an early American journal essay on argumentation – one of only a handful of essays specifically focused on argumentation that was published between 1890 and 1960 – Mary Yost (1881–1954) challenged this dualism by arguing that it was abandoned by psychologists in favor of more holistic views (Yost 1917). Logic and emotion cannot be separated, she argued: they are interdependent cognitive processes. Perhaps due to Yost’s influence, the dualism between conviction and persuasion in the textbooks underwent an important change. Some textbooks dropped the dualism, concentrating primarily on “rational appeals” addressed to reason and considering “psychological appeals” as secondary (e.g., Winans and Utterback 1930).

From the 1920s onwards, there appeared to be a growing interest in more theoretical issues. The articles on argumentation and rhetoric published in journals can be divided into two separate categories, which continue to exist to this day. On the one hand, there is *rhetorical criticism*, which seeks to develop and apply standards for critical judgments or concentrates on judging specific works of oratory;

on the other hand, there is *rhetorical theory* which seeks to describe and define the nature of rhetoric, often from a historical perspective (Cohen 1994, p. 159).

In Sect. 8.2, we will start our overview of the state of the art in communication studies and rhetoric with a discussion of the role of argumentation in the debate tradition. Although argumentation theory is not yet part of this tradition, all kinds of central concepts discussed in the early textbooks still play an important role in argumentation studies in the United States. This justifies paying attention to some of the pre-theoretical notions that are introduced. In Sect. 8.3, we discuss the starting points that have been developed later on in communication studies for theorizing about argumentation. The studies concerned are characterized by much reflection on the issues considered to be most central to dealing with argumentation: What is argumentation? How does argumentation manifest itself? What is the relation of argumentation to logic, dialectic, and rhetoric? The answers to these questions serve in fact as a preamble to the theorizing. In Sect. 8.4, we concentrate on the first of the two traditional branches of communication studies: historical-political analysis, also known as “rhetorical criticism.” Next, we focus in Sect. 8.5 on the other branch, rhetorical theory, again with an emphasis on argumentation or rhetorical phenomena closely related to argumentation. In Sect. 8.6, we discuss “argument fields” and “spheres of argumentation” – two important notions that have been further developed after Toulmin first introduced the notion of argument fields. In Sect. 8.7, we concentrate on the relatively new research perspective of “normative pragmatics,” an approach that examines the norms actually playing a part in argumentation by exploiting Gricean insights. In Sect. 8.8, we focus on argumentation in persuasion research. Finally, in Sect. 8.9, we discuss the study of argumentation in interpersonal communication.

8.2 The Debate Tradition

During the nineteenth century, debate was practiced in American universities and colleges, but only late in the nineteenth century did argumentation and debate become part of the curriculum. Debating was generally used as a pedagogical device for training future lawyers, public servants, and politicians.³

With the growing popularity of debate, textbooks devoted to argumentation were needed. The most influential was probably *Principles of Argumentation* by George Pierce Baker (1866–1935) (Baker 1895). Baker was heavily influenced by Aristotle,

³ During the first century of American colonization, education seemed dominated by the writings of Peter Ramus. By 1730 there was a turn to the classical tradition. Much later, under British influence, American rhetoric became fully Aristotelian. The first complete American rhetoric was that of John Witherspoon: “Based primarily on classical rhetoric, Witherspoon interpreted these principles [of rhetoric] in the light of the philosophy of his own time” (Guthrie 1954, p. 51). During the nineteenth century, there was considerable interest in public address. The English treatises dominating the field were those of John Ward, George Campbell, Hugh Blair, and Richard Whately (Guthrie 1954, p. 80).

Whately, and Mill. Contemporaries of Baker claim that his textbook dramatically transformed the teaching of argumentation and debate in the late nineteenth and early twentieth century. According to his former student William Trufant Foster (1879–1950), Baker was “the first man to develop systematic courses of instruction in argumentation and debating” (Gray 1954, p. 428).⁴

The revised version of Baker’s textbook, which he published together with Henry Huntington (1875–1965), is more elaborate. Baker and Huntington define argumentation as “the art of producing in the mind of another person acceptance of ideas held true by a writer or speaker, and of inducing the other person, if necessary, to act in consequence of his acquired belief” (Baker and Huntington 1905, p. 7). In their view of argumentation, both conviction and persuasion are central⁵: “Conviction aims only to produce agreement between writer and reader,” they say, while “persuasion aims to prepare the way for the process of conviction or to produce action as a result of conviction” (p. 7). Pure conviction appeals only to the intellect of a reader by clear and cogent reasoning. Persuasion may produce desired action either by arousing emotion regarding the ideas set forth or by adapting the presentation of a case partly or wholly to the special interests, prejudices, or idiosyncrasies of the reader. Whereas persuasion in the sense of emotional appeal may appear alone, conviction only very rarely takes place without persuasion.

Baker and Huntington’s work set an example for other textbooks. Most older textbooks (but also some modern ones) have sections with titles such as *Phrasing the proposition*, *Analysing the proposition*, *Proving the proposition: evidence*, and *Proving the proposition: inductive and deductive argument*.

Foster’s (1908) *Argumentation and Debating* is one of the textbooks in the tradition instigated by Baker. It contains additional practical chapters on debating contests and provides guidelines and step by step procedures for preparing a debate. Unlike Baker, Foster considers the burden of proof central. He also introduces the notions of an *affirmative* side and a *negative* side.

Foster starts with a chapter on phrasing the proposition. He stresses that the phrasing should be as clear as required in a law court, since unclear phrasing leads to lifeless quibble (1908, p. 2). In his view, argumentation also requires a complete proposition, “not a mere name” (p. 1). The proposition should be phrased in the form of a resolution (“resolved that. . .”). It should also be debatable. This means that it should not be obvious that the proposition is true or false. Furthermore, the proposition should neither be too broad nor ambiguous, and it should be interesting as well. The proposition should give the burden of proof to the affirmative: “For any argument, the subject should be so phrased that the affirmative makes the attack,

⁴ Foster’s (1908) own handbook, *Argumentation and Debating* and *Argumentation and Debate* by Laycock and Scales (1904) are both highly influenced by Baker’s *Principles of Argumentation*.

⁵ According to Baker and Huntington (1905), conviction and persuasion are complementary, “one being the warp, the other the woof of argumentation” (p. 10). In the subtitle of a collection of essays on the relationship between dialectic and rhetoric, *The Warp and Woof of Argumentation Analysis*, van Eemeren and Houtlosser (2002) express much later a related view.

advocates something new, or attempts to overthrow something which is established; in other words, so that the affirmative has the burden of proof" (p. 9).

After discussing the phrasing of the proposition, Foster shows how it should be analyzed (1908, p. 16). This analysis includes establishing the origin of the question at issue, the history of the question, defining the terms of the proposition, excluding irrelevant matters, stating admitted matters, and listing the points which, if proved, directly support the proposition. An analysis provides the arguer with a clarified proposition and the main arguments needed for its successful defense. Practically speaking, the analysis is helpful to finding the content of the affirmative's introductory arguments.

After the analysis of the proposition has taken place, the arguer has to find evidence to prove the proposition. Foster defines such a proof as "sufficient reason for assenting to a proposition as true" (1908, p. 51). Following Baker, he distinguishes two main types of proof for a proposition: evidence from authority and reasoning about facts, the latter being the larger category of the two.⁶

In a great many cases, we need to appeal to authorities to vouch for the facts that we use in our reasoning. In support of the reasoning itself, citation of authority is useless. An authority differs from a witness: an authority is a person "competent to give judgment as to principles of other inferences from fact," while a witness is a person "giving testimony concerning a disputed fact" (1908, p. 57). For both appeals, Foster provides a series of tests. They are phrased as questions, including inquiries about the definiteness of the authority (is the authority not just a vague group?) and the expertise of the authority. In addition, the authority should not be merely based on hearsay and should not be prejudiced, and the opinion of the authority should be shared by other authorities. Further questions Foster asks are of a more rhetorical nature: Is the authority used by the opponents and is the audience likely to accept the authority?

Foster set forth three types of reasoning about facts: (1) deductive and inductive argument, (2) the argument from example, and (3) argument from a causal relation. His explanation of deduction is quite rudimentary and remains limited to a sketchy outline of the classical syllogism. His treatment of induction, based on Mill, is also quite short. Moreover, the types of argument in this classification are not discrete: the argument from example, for instance, is a subtype of inductive argument. Because of the lack of examples, evaluation rules, and any further explanation, it is doubtful whether this account of logic will have been really useful to the debater.

In addition to induction and deduction, Foster discusses a series of argument forms that are clearly not logical in nature.⁷ For each argument form, he adds a series of tests, again in the shape of evaluative questions.

The *argument from example* may fall under two heads: *generalization* and *analogy*. Generalization must be seen as an imperfect induction: it makes a jump

⁶ In later textbooks, a sharper distinction is made between evidence (the material argumentation is based on) and reasoning.

⁷ These forms or kinds of arguments can be seen as forerunners of the argument schemes. Concepts such as argumentation structures can hardly be found in argumentation and debate handbooks.

from the known to the unknown. The “safety” of a generalization should be established by way of four tests: Is the relative size of the unobserved part of the class so small as to warrant the generalization? Are the members observed fair examples of the class? Are we reasonably sure that there are no exceptions? Is it highly probable that the general rule or statement is true?

The category of *argument from analogy* includes all arguments from resemblance. This means that relations that exist in one sphere of life or experience are taken as indications of what may be regarded as true of another sphere in which relations are similar. However, arguments based on similarities between objects also belong to this category.⁸ To test an argument from analogy, we must show that the cases indeed agree on essential points, that these points of likeness outweigh the points of difference, that the conclusion reached by the analogy is not discredited by other kinds of proof, and that the alleged facts on which the analogy is based are really true.

Causal arguments proceed from effect to cause, from cause to effect, or from effect to effect. The first two kinds deal with processes from the known to the unknown. The argument from effect to cause attempts to prove that a given cause operates (or has operated) by pointing to an observed effect which could not be due to another cause. Test questions for this kind of argument are: Could any other cause have produced the observed effect? Is the assumed cause sufficient to produce the observed effect? And, finally, was the operation of the assumed cause prevented by other forces? Using argument from cause to effect, one can show that an event is probable or possible for the reason that there are known antecedent circumstances which are sufficient to bring about that event (Foster 1908, p. 131). To test arguments from cause to effect, the arguer should inquire whether the known cause is adequate to produce the effect in question, whether there may be other causes that are sufficient to prevent the known cause from producing the effect in question, and whether there is any positive evidence verifying or refuting the presumptions furnished by the argument from cause to effect.

Argument from effect to effect is “an argument from effect to cause fused with an argument from cause to effect” (Foster 1908, p. 135). The arguer reasons from the one effect to the other referring to a cause not mentioned in the argumentation. Since this is a combination of the first two forms, no test questions are provided. Unlike other authors, Foster does not consider the *argument from sign* to be a distinct class because it comes either as an argument from effect to cause or as an argument from effect to effect.⁹

In the chapter “Refuting opposing arguments,” Foster describes a series of fallacies as possible flaws in the reasoning of the opponent. There are two ways

⁸ This interpretation of analogy comes close to Whately’s account. According to Whately (1963, p. 90), resemblances are not so much in the things themselves as in the relations of the things to other things.

⁹ In leaving out the argument from sign, Foster follows Baker and Huntington (1905, p. 56). Some of the later textbooks do include the argument from sign as a distinct type of argumentation.

by which opposing arguments can be refuted: by questioning the truth of the alleged facts on which the argument is based or by questioning the validity of the reasoning process. In the latter type of refutation, knowledge of the fallacies is important because “a fallacy is an error in the reasoning process, an unwarranted transition from one proposition to another” (Foster 1908, p. 143). Judging by his categorization and treatment of the fallacies, Foster’s ideas about fallacies are Aristotelian. He starts with a broad category of fallacies of definition (ambiguity) and continues with hasty generalization, false analogy, mistaken causal relation, ignoring the question (irrelevant argumentation, including the fallacies of argumentum ad hominem and argumentum ad populum), and begging the question.

Besides pointing at fallacious reasoning, according to Foster, the arguer can also employ special techniques to refute the opponent’s reasoning: *reductio ad absurdum*, the method of residues (mention all possible conclusions and destroy all but one), the method of the dilemma (force the opponent to choose between two possibilities, so that the opponent is driven to absurdity or contradiction, whichever possibility is chosen), exposing inconsistencies, turning the tables (taking over the opponent’s argument and showing that it proves not the opponent’s case, but your own). The remainder of Foster’s textbook is about constructing the brief (a written outline of the debate, including the affirmative and negative side of the argument), stylistic issues, arousing the emotions (persuasion), and formal debate and the burden of proof.

Judging from the textbooks coming after Foster, there is hardly any progress in the thinking about argumentation. Nearly all textbooks keep following the general outline just described. Even when we look at the more popular modern debate handbooks, not much seems to have changed when it comes to the theoretical conceptualization of argumentation. In Freeley and Steinberg’s (2009) popular *Argumentation and Debate*, for instance, the traces of Baker and Foster are still clearly visible. The same kind of elements is explained and even in the same order of presentation. First, there is an analysis of controversy. The nature and evaluation of evidence is explained, the types of reasoning (including reasoning by example, reasoning by analogy, causal reasoning, and reasoning by sign) are distinguished, and their tests are explained.¹⁰ A list of fallacies is offered, advice is given about presentation, and various debate formats are discussed.¹¹

However, over the years, debate textbooks have become considerably more sophisticated in their analyses. They could, of course, rely on a growing body of experience, which allowed for a more textured and nuanced discussion, based on the conventional categories. Another remarkable change is that connections were made with classical rhetorical theory, particularly with the concepts of “common

¹⁰ The types of reasoning that are distinguished are very much like the types distinguished in Foster’s classification. Strikingly, like Foster, Freeley and Steinberg do not include the argument from authority in the classification of types of reasoning. They regard this as a type of evidence, exactly as Foster did.

¹¹ This list of elements is certainly not complete; it is just given to show that, when it comes to the argumentative parts of debate instruction, not much has changed over time.

topics,” “issues,” stasis, and logos, ethos, and pathos as modes of proof. Still, the textbooks retained a fairly straightforward emphasis on practice, without much reflection on goals, methods, and underlying assumptions. Other kinds of innovations in the textbooks were the introduction of the *stock issue model*¹² for defining the main point of controversy in policy debates¹³ and the introduction, in the 1960s, of the Toulmin model, which became an alternative to the classical syllogism.¹⁴

From the early 1960s onwards, the literature on debate shows a series of clear departures from the tradition. Perhaps the most influential publication was *Decision by Debate* by Douglas Ehninger (1913–1979) and Wayne Brockriede (1925–1988), which appeared in 1963. In embryonic form, this book offers a broader perspective on the debate activity. Debate is seen as a means of making decisions critically. It is described as being fundamentally a cooperative rather than a competitive enterprise. Ehninger and Brockriede incorporate the Toulmin model (see Chap. 4, “Toulmin’s Model of Argumentation”) in their approach.¹⁵ By portraying his model as a diagram, Ehninger and Brockriede may also have reinforced a more “formalistic” understanding of reasoning. More importantly, the use of the Toulmin model undercut the analytic ideal of argument as applied formal logic.¹⁶ From now on, inferences were seen as fallible and conclusions as uncertain. The warrants authorizing inferences were not considered to come from logical form but from the substantive beliefs of an audience.

A notable aspect of *Decision by Debate* is the treatment of the intertwined concepts of “presumption” and “burden of proof.” The notion of burden of proof had already been introduced by Foster but was hardly developed further. Ehninger and Brockriede distinguished different kinds of presumption and different kinds of burden of proof.

Subsequently, theorists of debate began to explore alternatives to the received tradition. In the late 1960s and early 1970s, a great many pages of the *Journal of the American Forensic Association* (now *Argumentation and Advocacy*) were filled with articles on alternative patterns of case construction – e.g., the comparative

¹² *Stock issues* are the issues that the affirmative side in a debate has to address in defense of the proposition.

¹³ The idea of using stock issues was introduced much earlier by Shaw (1916), who identified fourteen issues for propositions of policy. That list has since been reduced to the familiar four stock issues (problem, cause, cure, cost). See, for example, Mills (1964, pp. 65–68).

¹⁴ For a further discussion of these developments, see Rowell (1932), who places the pedagogical implications in clear perspective, and Howell (1940), who offers a historical examination. For a discussion of the relation of the stock issues with status theory, see Nadeau (1958) and Hultzen (1958).

¹⁵ Just like Brockriede and Ehninger, Hastings (1962) presented a typology of types of Toulmin warrants. His typology was later incorporated in the debate textbook by Windes and Hastings (1969).

¹⁶ Willard (1976) argued that in diagramming arguments, the mix of discursive and nondiscursive elements in argument is fundamentally misunderstood and too much credence is given to formal structure.

advantage of the affirmative case, the goals/criteria case, and the alternative justification case – as well as essays identifying underlying consistencies amid all the differences.¹⁷ The counterplan, a negative debate strategy that was traditionally dismissed as weak, was revived and theoretically anchored.¹⁸

Various authors began to focus their attention on the underlying nature and goals of the process of debate, believing that the emerging differences between theory and practice reflected different root assumptions about debate. The late 1970s and early 1980s saw essays explicating different paradigms or models of debate – the policy-making model, the hypothesis-testing model, the game-theory model, the critic-judge model, and the tabula rasa model, to name just a few of these. The traditional perspective on debate, now renamed the *stock-issues model*, took its place among these alternatives.¹⁹

One of the major trends emerging in the 1970s is to stress the links between debate and argumentation. Recognizing that debate involves specific applications of more general principles, educators began to develop courses in argumentation theory and practice that were no longer geared specifically to debate. These courses introduce growing numbers of students to a broad view of argumentation theory. To meet the newly emerged needs, new kinds of textbooks were also published. Among the most prominent of them are Richard Rieke and Malcolm Sillars's (1975) *Argumentation and the Decision-Making Process*, Barbara Warnick and Edward Inch's (1989) *Critical Thinking and Communication*, and Robert Branham's (1991) *Debate and Critical Analysis: The Harmony of Conflict*. Even books oriented primarily towards debate, such as J. W. Patterson and David Zarefsky's (1983) *Contemporary Debate*, now portrayed debate as a derivative of general argumentation.

The linkage between debate and argumentation has been explored in both directions. Not only has debate drawn insights from a general understanding of argumentation, it has also contributed to such understanding. In 1979, G. Thomas Goodnight (1980) delivered a paper on "the liberal and the conservative presumption," which demonstrates that presumption is not just an arbitrary concept or a tie-breaking rule but a substantive concept, which can be helpful in distinguishing political positions and understanding political disputes. Later, Goodnight (1991) drew attention to the dynamics of controversy. Controversy can be described as debate conducted over time, but without a priori rules, boundaries, or time limits. Scholars trained in debate have employed this understanding of controversy to provide new insight into cultural and political disputes, especially related to military policy and international relations.²⁰

¹⁷ See, for example, Fadely (1967); Chesebro (1968, 1971); Lewinski et al. (1973); and Lichtman et al. (1973). An essay questioning some accepted distinctions is Zarefsky (1969).

¹⁸ See, for example, Kaplow (1981).

¹⁹ Representative articles include Lichtman and Rohrer (1980) and Zarefsky (1982). See also the special forum on Debate Paradigms of the *Journal of the American Forensic Association*, 18 (Winter, 1982).

²⁰ See, for example, Dauber (1988) with regard to the nuclear strategic doctrine and Ivie (1987) with regard to American foreign policy.

Gordon Mitchell (1998) proposes in an essay to stop the “decertification of the public sphere.” He argues that a successful translation of argumentation skills into tools of democratic empowerment “requires affirmative efforts to clear spaces that free scholars to exercise and develop senses of argumentative agency.” With greater room to maneuver for inventing strategies for action, taking risks, making mistakes, and affecting change, scholars can begin to envision how to do things with arguments not only in the cozy confines of contest round competition but in the world beyond as well.

According to Mitchell, in both theory and practice, evolution of the idea of argumentative agency is generally driven by the idiosyncratic and often eccentric personal sentiments and political allegiances of teachers and students of argumentation. Those interested in seeing debate skills become tools for democratic empowerment tend to cultivate argumentative agency in their own pedagogical and political milieu. This might involve supporting and encouraging efforts of students to engage in primary research, organize and perform public debates, undertake public advocacy projects, and/or share the energy of debate with traditionally underserved and excluded student populations through outreach efforts.

8.3 Starting Points for Theorizing

In the traditional debate and argumentation textbooks, theoretical reflection on argumentation is not strongly developed. For theorizing about argumentation, clear, univocal, and widely accepted definitions are needed, but central notions such as *argument*, *argumentation*, and *rhetoric* are not well defined. Only in the second half of the twentieth century did communication scholars start to reflect more deeply on the theoretical starting points of argumentation studies.

In a paper presented in 1974, Brockriede (1992b) made a serious effort to delineate the concept of argumentation. He stresses the fact that the field of argumentation studies was for a long time dominated by the image of argument as public speech: the term *argument* referred to the content of a public address or a public debate. Brockriede points to the fact that arguments are not only used in law courts or debate tournaments but also in interpersonal transactions, in the construction of scientific theories, and in reporting about research studies. For him, argumentation is a human activity rather than a “thing” that appears in texts.

Brockriede (1992b) clarifies this view by listing a series of characteristics of argumentation. Although these characteristics do not represent a series of necessary or sufficient conditions of argumentation, let alone a “final” definition, arguments can be found in particular where these “six characteristics are joined” (p. 77). First, argumentation involves an inferential leap from existing beliefs to the adaptation of a new belief.²¹ Second, there should be a rationale to support this leap. If this

²¹ In a Toulmin-like fashion, Brockriede argues that an inferential leap is necessary because in argumentation the premises do not entail the conclusion: “a person has little to argue about if the conclusion does not extend beyond the materials of an argument [. . .]” (1992b, p. 75).

rationale is too weak, there is no argument, but a mere quibble. If the rationale is so strong that the conclusion is entailed, there is proof, instead of an argument. Three, there should be a choice between two or more competing claims. Four, argument involves a regulation of uncertainty. If certainty existed, then there would be no need for people to engage in argument. When uncertainty is high, the need for argument is also high. Five, argument involves a willingness to risk confrontation of a claim with the views of peers. Arguers can regulate uncertainty if their claim meets certain tests of confrontation. When two persons engage in mutual confrontation to make a rational choice, they share the risks of what that confrontation may do to the maintenance of their ideas. Six, argument involves a joint frame of reference. Arguers must share one another's world views or frames of reference to an optimal degree (1992b, p. 77).²²

In an essay entitled "Two concepts of argument," first published in 1977, Daniel J. O'Keefe (1992) reacts. He distinguishes between two different concepts of the word "argument": argument can refer to a sort of communicative act (denoted by *argument*₁), and it can also refer to a particular kind of interaction (*argument*₂). According to O'Keefe, "Arguments₁ are thus on a par with promises, commands, apologies, warnings, invitations, orders, and the like. Arguments₂ are classifiable with other species of interactions such as bull sessions, heart-to-heart talks, quarrels, discussions, and so forth" (1992, p. 79). The distinction is evidenced in everyday talk by the difference between "arguing₁ that" and "arguing₂ about." For instance, one may argue *that* financial cuts are necessary, and two roommates may argue *about* who is going to do the dishes. O'Keefe claims that Brockriede's analysis confuses arguments₁ with arguments₂. He indicates that prescriptive approaches merely deal with argument₁ while descriptive approaches tend to deal with argument₂. This distinction is in the American communication and rhetoric community commonly seen as the basis for further defining argumentation and determining its characteristics.²³

The distinction between argument₁ and argument₂ challenged the assumption that the first of these two senses is the more foundational one. In this sense, O'Keefe's distinction can be seen as an attempt to clarify the dispute between those who insist on the importance of nondiscursive elements in argument and those

²² Wenzel believes that Brockriede offers a description of the kinds of situations where the study of argument will prove fruitful. He proposes to recast Brockriede's description as follows: "The study of argument, however one construes it, is generally appropriate in situations where one or more members of a social group (i.e., persons who share a frame of reference) respond(s) to problems or uncertainties by advancing and justifying claims in order to facilitate decisions or choice among alternatives. Incidentally, among other features of interest, is the degree to which such arguers put themselves at risk" (1992, p. 122).

²³ Hample (1992) proposes a third concept of argument: argument₀. This is "the cognitive dimension of argument – the mental processes by which arguments occur within people" (p. 92). Hample maintains this is necessary because leaving out "a psychological-based understanding of argument would cause confusion, distortion, and superficiality at most" (p. 106). It is the arguer's cognitive system that controls the meaning and therefore the outcomes of arguments (Hample 1977a, b, 1978, 1979a, b, 1980, 1981).

who insist that every element of an argument must either be linguistic or linguistically explicable (Burleson 1979, 1980; Kneupper 1978, 1979). Charles A. Willard (1976) had earlier argued that argument diagrams are not only poorly suited to cover psychological processes but also inadequate for describing messages because they cannot depict irony, ambiguity, and other nondiscursive aspects of messages. Defenders of diagramming argued that if Willard's point is carried to its logical conclusion, it makes important aspects of arguments resist analysis. O'Keefe's distinction suggests that arguments₁ are diagrammable while arguments₂ are best studied as instances of communicative acts. Though arguments may trade upon multiple modes of communication, verbal and nonverbal, and different motives, discourse organization, and relational considerations, O'Keefe argued that they are best defined by appealing to paradigm cases – the most clear-cut, uncontroversial cases.

At about the same time, Willard started the project that would lead to the constructivist theory of argumentation he developed in his monographs *Argumentation and the Social Grounds of Knowledge* (1983), *A Theory of Argumentation* (1989), and *Liberalism and the Problem of Knowledge* (1996). He defined argumentation as an interaction in which two or more people maintain what they construe to be incompatible claims. In Willard's view, researchers should explore what actually takes place in such interactions.

In 1995, Zarefsky proposed a general definition of argumentation “as the practice of justifying decisions under conditions of uncertainty” (1995, p. 43). This definition has four key elements. First, argumentation is a *practice*: it is a social activity in which people engage. In the course of this practice, people make and examine texts, which are to be studied as products of the practice. Argumentation, however, is not a practice that can be easily isolated from other practices. According to Zarefsky, it has no unique subject, and people who engage in argumentation are also doing other things. They may not even recognize what they are doing as argumentation. Argumentation is not only something people naturally do, it is also a concept analysts use in examining all kinds of social practices with a critical attitude. The view of argumentation as a practice contrasts strongly with the view of argumentation as a textual or logical structure.

Second, in Zarefsky's definition, argumentation is a practice of *justifying*. The word “justifying,” standing in contrast to the word “proving,” is crucial. It expresses the recognition that the outcomes of argument cannot be certain, which inspires the dethronement of the analytic ideal. On the other hand, these outcomes are neither capricious nor whimsical. They are supported by what the audience would regard as good reasons warranting belief or action.

To say that a claim is justified immediately raises the question, justified to whom?

Depending on the situation, several answers can be given to this question. One can justify claims for oneself, for one's family or friends, for the particular audience present on the occasion, for a broader audience defined by some special interest, for the general public, and even for an audience of people from

diverse cultures. The question then becomes whether the practical meaning of *justify* varies among these different audiences and whether the process of justification is different as well.

Much of the literature on argument fields, spheres, and communities (see [Sect. 8.6](#)), as well as a great many of the discussions of what counts as evidence for claims, can be seen as addressing the basic question of justified to whom. In any case, this question immediately calls attention to the fact that argumentation is addressed to people. Argumentation is a practice that occurs in the context of an audience, not in vacuo. Since it is concerned with the nexus between claims and people, it clearly is a rhetorical practice.

Third, argumentation is a practice of justifying *decisions*. Decisions involve choices, for if there were only one possibility there would be nothing to decide. But decisions also presuppose the need to choose because the alternatives are perceived as being incompatible. Making a decision is like standing at the proverbial fork in the road. One cannot stand still, one cannot take both forks, and one cannot be sure in advance which fork will prove to be the right path. Sometimes, decisions are bound to a particular moment in time. In 1992, for instance, each of the nations in the European Union had to decide whether to approve of the Maastricht Treaty, just as in that same year the US Congress had to decide whether to ratify the North American Free Trade Agreement. Taking these decisions was in both cases accompanied by attempts to justify the one decision or the other. Sometimes, however, a decision evolves over a long period of time, and the process of justifying is likewise longitudinal. For many years, for instance, we have witnessed an ongoing controversy about whether the national or the global economy should be the unit of analysis in dealing with policy choices. From a longer term perspective, Maastricht and NAFTA might be seen as moments in such an ongoing controversy.

Decisions involve choices, but they are not always so final that they obliterate the alternative that is not taken. The same forks in the road may present themselves repeatedly, even if in a slightly altered guise. In the United States, for example, the controversy about how best to pay for health care is largely a reenactment of arguments that go back 60 or 80 years, even though various specific decisions have been made along the way. The minority position is seldom vanquished completely; someday it may come back and win. Recognition of this fact leads to the awareness that making decisions should involve respecting all the proffered alternatives, even if only one is selected at a given time.

Fourth, argumentation is the practice of justifying decisions *under conditions of uncertainty*. The defining feature of a rhetorical situation is the need to make a choice when not everything can be known. We might have to act in the face of incomplete information, the universe affected by the decision might be so large that only a sample can be considered, or it might depend on other choices or outcomes that cannot be known what decision is the best to take. Alternatively, the situation may be uncertain because of an inferential gap between data and conclusion.

The data might be factual, whereas the conclusion is a matter of belief, value, or policy. Or perhaps the information relates to present conditions, whereas the decision involves predictions for the future. For whichever reason, people argue to justify decisions that cannot be made with certainty. Hence, according to American communication scholars such as Zarefsky, argumentation is situated in the realm of rhetoric, not of apodictic proof. This does not mean that the outcomes are irrational but that they are guided by rhetorical reason: warrants are evoked from the cumulative experience of a relevant audience, not from a particular structure or form.²⁴

Another issue that has been discussed frequently is the status of perspectives on argumentation and the way in which these perspectives relate to each other. Joseph Wenzel (1992) explains that there are three perspectives which should be seen as distinct points of departure for theorists. The three perspectives on argument are (1) the rhetorical, which examines the process of persuading; (2) the dialectical, which focuses on the procedures used in arguing; and (3) the logical, which critiques the product of arguing according to the standards of logical validity. Traditionally, these perspectives are correlated to three senses of argumentation: argument as a process, argument as a procedure, and argument as a product.²⁵ The term *argument* is used in the process sense “whenever we apply the name argument or arguing to the phenomena of one or more social actors addressing symbolic appeals to others in an effort to win adherence” (Wenzel 1992, p. 124). *Argument* in the procedure sense means argument as a procedure or methodology for bringing the natural process of arguing under some sort of deliberate control. *Argument* in the product sense may be thought of as a set of statements (premises and conclusions or evidence and claim) by which someone chooses to represent “meanings” abstracted from the ongoing process of communication. This division means that there can be different answers to the question “What is argument?” For a rhetorician, the answer is as follows: an argument is “a mode of appeal, a means of persuasion, a behavior typical of symbol users communicating” (p. 125). For a dialectician the answer is as follows: an argument is “a disciplined method of discourse for the critical testing of theses” (p.125). A logician may answer: an argument is “a set of statements consisting of premises and conclusion or claim and support” (p. 125).²⁶

²⁴ This conception of argumentation helps to organize the branches of the study of argumentation in communication and rhetoric, giving greater coherence to an otherwise disparate and diffuse field. It encompasses argumentation from “the personal” to “the cultural” and includes descriptive and normative dimensions.

²⁵ Strictly, Wenzel does not make a distinction between three different kinds of argument: the three perspectives represent different ways of approaching argumentation.

²⁶ Wenzel points at some pseudo-problems caused by using confusing notions like “rhetorical validity” by authors such as Farrell (1977) and McKerrow (1977), in which logical and rhetorical perspectives are confounded.

8.4 Historical-Political Analysis

One of the main branches of the American rhetorical tradition is *rhetorical criticism*: the analysis and evaluation of public speeches or texts that are meant to be persuasive. Rhetorical criticism emanated from two sister disciplines: history and English. Originally, rhetorical criticism tended to be more or less Aristotelian. The typical criticism offered a description of the historical setting and a biographical sketch, followed by the application of Aristotle's and Cicero's canons to the discourse under study (Cohen 1994, p. 181). During most of the 1930s, 1940s, and 1950s, public address was the dominant subject in the field of rhetorical scholarship. However, argument analysis was usually not a major part of the analyses.

Although never systematically based on theory, hardly any study of public address was published which did not contain some reference to the arguments of the speakers. According to Brockriede (1992a, pp. 36–37), these studies were “castigated” by Edwin Black and others as “neo-Aristotelian,” making use of classical constructs and terminology, all of which carried with them the baggage of assumptions that worked wonderfully well in understanding classical oratory, but less well in dealing with differences in people, issues, situations, and cultural norms. Black argues that neo-Aristotelians operate with a restricted view of context: they confine themselves to a discussion of the immediate audience and occasion. In addition, their judgment consists of determining the persuasive effect of a speech on its immediate audience, but they do not give a judgment.

An example of a rhetorical critique that has remedied these problems is offered by Michael Leff (1941–2010) and Gerald Mohrmann (Leff & Mohrmann 1994), who made an analysis of Abraham Lincoln's speech at Cooper Union on February 27, 1860. Leff and Mohrmann complain about scholars who conclude that Lincoln was very convincing during that occasion but do not provide supporting evidence for this claim. First, they observe that the text concerned is an example of a specific genre: a campaign oration, a speech designed to win nomination for the speaker. Leff and Mohrmann point at specific argumentative strategies and stylistic means that are directly aimed at achieving this goal. In this case, both policies and character are in question, but the general objective is ingratiation (p. 175). Lincoln tries to become spokesman for his party by demonstrating that he is a man of reason. In the address, he deals exclusively with slavery – a good choice, according to Leff and Mohrmann, since it was a paramount issue of the day, which had spawned the Republican Party, and an issue with which Lincoln was closely identified (p. 176). Lincoln chooses to follow a specific tactical line of argument. He quotes his main opponent, follows his logic, and then turns it against him via an *ad hominem* attack. Leff and Mohrmann show Lincoln's effective use of the stylistic element of repetition. In the second part of the speech, Lincoln makes successfully use of the form of *prosopopoeia*, creating a mock debate between Republicans and the South (p. 181).²⁷

²⁷ Making use of the rhetorical notions of *enactment*, *embodiment*, and *evocation*, Leff (2003) demonstrates in his analysis of Martin Luther King's “Letter from Birmingham Jail” how these dimensions of rhetorical argumentation effectively enhance the persuasiveness of the text.

John Campbell (1993) shows that in *The Origin of Species*, Darwin had to overcome specific difficulties related to different audiences with conflicting viewpoints. Darwin was able to derive a clever synthesis. According to Campbell, Darwin's ability to adopt many of the arguments of his opponents as his own made *The Origin of Species* equally elegant from a rhetorical and a scientific point of view. The rhetoric of the geological catastrophists and the rhetoric of the geological uniformitarians involved two mutually opposed legacies. Darwin had to deal with the catastrophists, who believed in evolution but vehemently denied the ability of natural causes to bring about evolution. The uniformitarians denied that there had been any cumulative progress in a particular direction, but affirmed that natural forces could bring about random change. In his exposition of the mechanism of natural selection, Darwin employed the uniformitarians' manner of explanation to establish on naturalistic grounds the evolutionary conclusions of the catastrophists. Darwin thus presented natural selection under the metaphor of a conscious, choice-making intelligence to a public brought up in a theological tradition teaching men to view the reality of the organic world as artifacts of a conscious designer (Campbell 1993, p. 158).

When it comes to argumentative analysis of historical and contemporary political discourse, Zarefsky is without any doubt the most prolific American scholar. In his analyses of public argumentative discourse, he supplements classical rhetorical insights with modern rhetorical insights whenever this seems functional. In *President Johnson's War on Poverty*, Zarefsky (1986) examines how public policy can be put in a strategic perspective by discursive means. He concentrates on President Johnson's efforts to promote his Great Society by declaring "unconditional war" on poverty. The central question is how Johnson's antipoverty program, as laid down in the Economic Opportunity Act, gained first such strong support and fell so far later on. Instead of blaming the war in Vietnam for this negative effect, as others did, Zarefsky looks for the answer to this question in the discourse concerning the war on poverty.

Zarefsky's thesis is that the rhetorical choices ensuing from the decision to call striving for abolishing poverty a "war" were instrumental in obtaining the passage of the Economic Opportunity Act but also in its destruction. In his monograph, he focuses primarily on the executive branch's attempt to persuade the Congress to initiate and sustain the antipoverty program. The symbolic choice made by calling the antipoverty policy a "war" and the symbolic choices that go with it ("soldiers," "enemy," "battle plan") suggest a view of the world that puts all measures proposed in a specific perspective. This is why these choices play an important role in the process of public persuasion: since the symbols used define the issues in a way that highlights some aspects of the issues while diminishing others, they "evoke support or opposition by virtue of their association with an audience's prior experience and belief" (1986, p. 5). As Zarefsky explains in his analysis, in the case of the "unconditional war on poverty," the rhetorical choices that were made stimulated by their symbolic value both short-term rhetorical success and long-term rhetorical failure.

In *Lincoln, Douglas and Slavery*, Zarefsky (1990) analyzes the seven 1858 encounters between Abraham Lincoln, the candidate of the Republican party for a US Senate seat from Illinois, and Stephen A. Douglas, the incumbent senator seeking reelection, which have become known as the *Lincoln-Douglas debates*. The later President Lincoln was glorified after his assassination and the Lincoln-Douglas debates came to be seen as the paradigm case and model of what political debate ought to be. Zarefsky considers this a “generally implausible” judgment, which is “not supported by the record” and blinds us to “the true genius” of the debates (p. 221). He provides a rhetorical perspective on these debates as public arguments, “focusing on how gifted advocates selected their arguments and appeals from the available means of persuasion and how they shaped and fashioned the arguments to meet the needs of the audience and situation” (p. xi). This perspective helps to explain “how linguistic and strategic choices both reflected and affected the course of the deepening controversy over slavery” (p. xi).

According to Zarefsky, in the debates, four patterns of argument can be distinguished: constitutional argument, historical argument, conspiracy argument, and moral argument. Concentrating on the relations between arguments and audiences, he traces each of these argument patterns across the debates and explains and assesses them. In the face of the contextual constraints the debaters had to deal with, the debates “reveal two accomplished politicians jockeying for advantage by carefully selecting and effectively using the weapons in their rhetorical arsenal” (Zarefsky 1990, p. 222). As the analysis reveals, the debates were often repetitive, charges were often traded without evidence, “and the candidates’ remarks often veered down the byways of local politics” (p. 224). In Zarefsky’s view, because they so clearly demonstrate what the possibilities for discussion are “when a fundamental issue is transformed in the crucible of public debate” (p. 222), they nevertheless deserve their exalted historical position.²⁸

Edward Schiappa (2002) explicates his rhetorical approach to arguments about definitions by presenting a case study about arguments concerning the definition of *person* and *human life* in the context of the constitutional disputes on abortion in the United States in the wake of the *Roe v. Wade case*. In his view, “definitions always function to serve particular interests,” and “the only definitions of consequence are those that have been empowered through persuasion or coercion” (2002, p. 75). Schiappa provides a rhetorical analysis of the way in which the Supreme Court treats the questions of definition. He shows that the questions “What is a person?” and “What is human life?” – which allow for infinite answers – are sidestepped. They are turned into a “more productive and answerable” question or the parties are left room “to offer – through persuasion but not coercion – competing answers” (p. 78).

²⁸ In other analyses, Zarefsky (1980) stresses the importance of dissociation and making distinctions in argumentative discourse. He explains Lyndon Johnson’s advocacy of affirmative action by dissociation of the phrase “equal opportunity.”

Robert Newman (1961) analyzed much earlier the public debate over the question whether the United States should extend diplomatic recognition to the communist government of China. He considers three kinds of issues that are central in this controversy. First, the moral: Does the communist regime “deserve” recognition? Would American recognition of that regime betray the nationalist Chinese on Formosa? Second, the political: Would recognition aid the prospect for disarmament and improve communication and negotiation with China? Third, the legal: Does recognition signify approval and does the communist government represent “the will of the nation”?

Many contemporary theorists would have the critic abandon traditional forms of argument analysis and evaluation: instead, they endorse an audience-centered perspective that focuses on explanations of how argumentative discourse operates in a given context. Walter Fisher (1987), for example, advocates using *narrativity*, focusing on coherence and fidelity of argumentation as measures of its worth. He conceptualizes human communication, and by extension public moral argument, as the function of a “narrative paradigm.” According to Fisher, humans are storytellers by nature, and the “reason” of public moral deliberation or argumentation is therefore better understood in and through the narratives.

Marilyn Young and Michael Launer (1995) choose to combine an audience-centered approach with making use of the possibilities formal approaches offer to assess logical structure and evidentiary strength. An example is their analysis and evaluation of an instance of conspiracist rhetoric by David Pearson, writing about the alleged American involvement in the 1983 destruction of Korean Air Lines’ Flight 007. Young and Launer conclude that Pearson’s article is “persuasive simply because he tells a better story, successfully exploiting a confluence of public knowledge about past espionage activities, traditional American distrust of government, a concomitant faith in technology, and the administration’s willingness to reveal sources and methods of intelligence” (1995, p. 25). In addition, they notice that Pearson makes ample use of quasi-logical argumentation and the false dilemma, strategies that are often used in presenting conspiracy theory.

David Williams, John Ishiyama, Marilyn Young, and Michael Launer (1997) study the argumentative strategies used in the 1993 Duma elections. They argue that the Communist Party of the Russian Federation (CPRF), led by Gennady Zyuganov, incorporated rhetorical values and audience adaptation into its campaign strategy. Finding its discursive ground limited by history, the CPRF gradually shifted its rhetorical posture and argumentative strategies, redefining itself in the process. This evolution allowed the CPRF to employ the ideographs of “democracy,” “will of the people,” “citizen,” and other key terms of Western-style democracy, while retaining, albeit in a transformed meaning, traditional communist ideographs such as “justice” and “spirituality.” In addition, the CPRF was able to borrow selectively from the history of the USSR between 1917 and 1989, thereby imbuing their political appeals with historical force and cultural memory.

8.5 Rhetorical Studies of Argumentation

Scholars of rhetoric writing about the theoretical foundations of their discipline wonder what rhetoric really is, what the relation is between rhetoric and truth, or what its moral value is. These reflections sometimes lead to quite abstract theoretical investigations whose relationship with argumentation theory is not at all clear. However, there are also rhetorical studies that relate directly to argumentation. Even when they are not inherently argumentative in orientation, in some way or another, theories of rhetoric always relate to argumentation.

Three general stages can be distinguished in the development of rhetorical theory in speech communication. In the first stage, which began in the early twentieth century, rhetorical scholars focused on the interpretation and explanation of ancient rhetoric.²⁹ In the second stage, which starts in the 1950s, some scholars aimed at developing new ideas about rhetoric, within the traditional range of topics, but from a modernist objectivist perspective. In the third stage, which starts in the 1960s, the scope of rhetorical theory is widened to a large extent.

In the first stage of this development, the authors focused on classical rhetoric and turned to British rhetorical theory from the eighteenth century to a lesser extent. Aristotle's definition of rhetoric as the faculty "of discovering in the particular case what are the available means of persuasion" is then the starting point of the theorizing. Until 1960, the focus remained primarily on classical rhetoric.

Edward Schiappa and Omar Swartz (1994, p. xi) distinguish two goals in the early scholarship: historical reconstruction to understand the contribution of past theorists and contemporary appropriation to utilize the insights of past theorists or practitioners to inform current theorizing or criticism. In an influential article on the Aristotelian enthymeme published as early as 1936, James McBurney (1905–1968) pursues both goals (McBurney 1994). He wants to clarify the classical notions of the enthymeme and attempts, at the same time, to show how the enthymeme can be used in contemporary argumentation and speaking classes. He turns against the received understanding of the Aristotelian enthymeme as a syllogism of which one premise is suppressed. According to McBurney, this understanding of the enthymeme is wrong; he believes that Whately is partly responsible for this narrow interpretation (1994, p. 90).

McBurney maintains that, in spite of the fact that it happens quite often, the omission of a proposition is purely accidental. He believes that Aristotle meant that the enthymeme usually lacks one or more propositions (1994, p. 85). However, when examining the makeup of an enthymeme, it is not so much the fact that a proposition is left unexpressed, but the contents of the premises that are to be considered. Aristotle called the rhetorical syllogism, which existed next to rhetorical induction (example), the *enthymeme*. When he defines an enthymeme as "a syllogism starting

²⁹ Lucaites and Condit (1999, p. 8) describe rhetorical theory from 1920 through 1960 as "an exercise in intellectual history." Little nonclassical theorizing took place in the period before the Second World War.

from probabilities or signs,” he appears to have had this distinction in mind. A general principle here is probability, which, when applied in argument, is not used to prove the existence of a fact (that is already established), but to explain it. In the argument, a certain cause is attributed to an already accepted effect. When Aristotle talks about “signs,” he refers, according to McBurney, to propositions that establish a conclusion by pointing at signs that are not causal in nature. McBurney sustains this interpretation by pointing at a similar distinction made in the *Posterior Analytics*, Aristotle’s treatment of scientific demonstration: the ratio essendi and the ratio cognoscendi. A ratio essendi is an argument to account for the fact or principle maintained, taking its truth for granted: it mentions a cause or a reason for the existence of a fact. A ratio cognoscendi, on the other hand, is a reason for acknowledging the existence of a fact: it supplies a reason establishing the existence of a fact without making any effort to explain what has caused it. A correct view of the enthymeme is, in McBurney’s view, a necessary starting point for any significant attempt to evaluate this concept and the theory of argument in which it plays a part.³⁰

In the second stage of the rhetorical theorizing, the Aristotelian viewpoint was not lost. Rhetoric was still seen as the faculty of discovering in the particular case what are the available means of persuasion. However, the focus is not so much anymore on the interpretation of ancient theories and concepts as on the construction of new theories of rhetoric. In his influential and much cited article “The rhetorical situation,” published in 1968, Lloyd Bitzer (1999) provides a prototypical example of this kind of research.³¹ Bitzer was interested in the question as to what extent rhetorical discourse is bound to its context. Rhetorical discourse is frequently distinguished from philosophical and scientific discourse because it is always situated and does not seem to have the universal aspirations of philosophical and scientific discourse: it is to be judged according to criteria of particularity, contingency, and propriety. Bitzer stresses the fact that rhetoric is situational because, in his view, rhetorical discourse obtains its character from the situation which generates it. By the latter, he means that rhetorical texts derive their character from the circumstances of the historical context in which they occur. The rhetorical situation should be regarded

as a natural context of persons, events, objects, relations, and an exigence which strongly invites utterance; this invited utterance participates naturally in the situation, is in many instances necessary to the completion of the situational activity, and by means of its participation with situation obtains its meaning and its rhetorical character. (1999, p. 219)

Thanks to Bitzer, more and more rhetorical theorists began to realize that their analyses should take the context of the discourse into account.

According to Bitzer (1999), any rhetorical situation has three constituents: the *exigence*, the *audience* constrained in decision and action, and the *constraints* which influence the rhetor and can be brought to bear upon the audience. The exigence

³⁰ After McBurney’s (1994) article was published, a popularized version of his theory has appeared in argumentation and debate handbooks.

³¹ Bitzer’s “The rhetorical situation” was included in the first issue of the new journal *Philosophy and Rhetoric*.

should be seen as an imperfection (a problem, a defect, or an obstacle) – something that can and should be changed by the discourse. A problem that cannot be removed by way of discourse is not a rhetorical exigence. Rhetoric always requires an audience because rhetorical discourse produces change by influencing the decisions and actions of persons who function as “mediator of change” (Bitzer 1999, p. 221). The audience is rhetorical exactly because it is supposed to function as a mediator of change. Every rhetorical situation contains a set of constraints made up of persons, events, objects, and relations which have the power to constrain the decisions and actions needed to modify the exigence. The rhetorical situation may therefore be defined as “a complex of persons, events, objects, and relations presenting an actual or potential exigence which can be completely or partially removed if discourse, introduced into the situation, can so constrain human decision or action as to bring about the significant modification of the exigence” (Bitzer 1999, p. 220).

Henry W. Johnstone Jr. (1920–2000) analyzed the relation between argumentation and selfhood (1959). To engage in argumentation, he writes, is to accept risk – the risk of being proved wrong and having to alter one’s belief system and self-concept. But the very act of person risking proves to be person making, constitutive of one’s sense of self.³²

The third stage of rhetorical theorizing was initiated in 1967 by Robert L. Scott. Scott’s (1999) article “On viewing rhetoric as epistemic” presented a philosophical challenge to the understanding of the substance and sociopolitical significance of rhetoric. This essay was the starting point of significant debates in the 1970s and 1980s on the role of rhetoric in the construction of truth. Scott argued that rhetoric is not simply a means of making the truth effective, but quite literally a way of knowing, a means for the production of truth and knowledge in a world where certainty is rare and action must be taken. In advancing this view, he reacts to the broadly accepted notion of rhetoric as “making the truth effective in practical affairs.” According to Scott, viewing rhetoric as only instrumental in making (true) messages persuasive is not only a very limited but in fact also a wrong position. He agrees with Ehninger and Brockriede’s conception of debate as a cooperative critical inquiry which can result in truth. Because rhetoric may be viewed as creating truth, instead of just giving effectiveness to truth, rhetoric can be seen as epistemic.³³

The only sort of arguments which is supposed to answer the demands of certainty made in epistemological speculation consists of the arguments which

³² This view was further developed in Natanson and Johnstone Jr. (1965), and Johnstone Jr. (1970), and modified in Johnstone Jr. (1983). For an example of Johnstone Jr.’s early influence on argumentation scholarship, see Ehninger (1970).

³³ Another influential scholar discussing in the relationship between rhetoric and truth was Thomas Farrell (1999), who developed a conception of “social knowledge” that stood in contrast to “technical knowledge.” He did not go as far as Scott, who believed that rhetoric was generally epistemic. Based on American pragmatism and the social theory of Habermas, Farrell maintained that social knowledge is essential to generating social cooperation: “Social knowledge comprises conceptions of symbolic relationships among problems, persons, interests, and actions, which imply (when accepted) certain notions of preferable public behavior” (1999, p. 142).

Toulmin calls analytic (see Chap. 4, “Toulmin’s Model of Argumentation”). Scott, however, finds it questionable whether analytic arguments should be called *arguments* at all, since the word “argument” suggests the drawing of conclusions that are new. Analytic arguments are tenseless: they cannot exist in time. Substantial (universal) truths are a logical impossibility because in substantial arguments, “a shift in time [between premise and conclusion] always occurs.” If there is no shift in time, then one is simply reporting what is present, not arguing (Scott 1999, p. 133).

Scott’s essay has been hugely influential. Together with an essay written in 1967 by Barry Brummett (1999), it marks the beginning of the movement which is now called *theory of inquiry* or – one step further – *Big Rhetoric* (Schiappa 2001, p. 260).³⁴

According to Brummett (1999), people have no direct access to truth, and there is no “objective reality.” Truth is always a matter of interpretation, and the “meaning of reality” is therefore much more important than plain “truth.” Discovery and testing of reality is not independent of people, but takes place through people. Because the discovery of knowledge is an interactive matter and is in the end intersubjective, rhetoric offers the best model for this process (Lucaites and Condit 1999, p. 129). Brummett’s work contributed to the emerging belief that truth is relative to argument and to audience. It stimulated examining what sorts of knowledge are rhetorically constructed and how arguing produces knowledge. Among the answers that were proposed is the claim that all knowledge is rhetorical and that there are no transcendent standards.

Under the heading of “theory of inquiry,” rhetorical theorists and critics began to shift their attention away from public discourse, focusing primarily on issues of governance dealt with in the type of texts that were traditionally the object of study in rhetoric. The basic assumption of scholars working in the theory of inquiry is that science is governed by rhetoric.

More papers and books have probably been written about the rhetoric of science than about any other rhetorical field.³⁵ The popular conception is that the hard sciences – the empirical analogue of formal logic and mathematics – yield certain knowledge. Against this background, it seemed easier to establish that rhetoric is part of other ways of knowing if it can be demonstrated that there is a significant rhetorical component even to the hard sciences. In addition, there have been studies of rhetoric in economics, sociology, medicine, statistics, business, history, religion, and other disciplines.³⁶

³⁴ “Theories associated with Big Rhetoric are credited with popularizing or at least rationalizing what Herbert W. Simons (1990) calls the ‘rhetorical turn’ in a variety of disciplines” (Schiappa 2001, p. 260). In the conception of Big Rhetoric, virtually everything can be called *rhetoric*.

³⁵ See, to name a few outstanding examples, Prelli (1989), Gross (1990), and the special issue on rhetoric of science of *The Southern Communication Journal* edited by Keith (1993).

³⁶ For examples of such studies, see McCloskey (1985), Kellner (1989), Hunter (1990), and Simons (1990). This line of inquiry received a powerful boost from the 1984 conference The Rhetoric of the Human Sciences at the University of Iowa, the subsequent formation of the Project on Rhetoric of Inquiry (Poroi) at that institution, and the series of books on rhetoric in the human sciences published by the University of Wisconsin Press (see Nelson et al. 1987).

Another influential type of rhetorical theory is known as *social and cultural critique*. Although it is usually not characterized this way, Fisher's (1987) work on narration, mentioned earlier, is an example. Fisher started to flesh out the meaning of "good reasons," the rhetorical equivalent of formal deduction. He found that good reasons often take the form of narratives and has even gone so far as to claim that storytelling is a defining aspect of the human condition. Due to what Fisher calls the "rational world model" of knowing, storytelling has been traditionally excluded from the category of reasoning. The result, Fisher believes, is that certain kinds of claims are systematically privileged over others. In Fisher's example of the nuclear debate, it is scientific claims that are preferred over moral claims.

Although this is not Fisher's primary purpose, his work points to the nexus between argumentation and power. It is power, whether political, social, or intellectual, that permits us to stipulate what sorts of claims "count" in an argumentative situation. Power enables those who hold it to impose a partial perspective as if it were holistic – the definition usually given of the term *hegemony*. A recent wave of argumentation studies seeks to explore and expose the tendency of power to foreclose discourse, and achieving emancipation by opening up alternatives. This research focuses on marginalized arguers and arguments; it is given a strong impetus by the widespread concern for matters of race, gender, and class.

Big Rhetoric turned away from argumentation analysis and does not pay much attention to argumentation on the textual level of the sentences making up a speech or text. In spite of this, some rhetorical scholars are in a traditional vain still working on argumentation and rhetorical theory. Jeanne Fahnestock (2011), for one, provides an in-depth overview of the stylistic aspects of the persuasion process. Drawing on key texts from the rhetorical tradition, as well as on newer approaches from linguistics and literary stylistics, she demonstrates how word choice, sentence form, and passage construction should be taken into account in a full analysis of arguments.³⁷

8.6 Argument Fields and Spheres of Argumentation

In the 1970s, American argumentation scholars picked up the notion of *field*, which was introduced by Toulmin (2003) in *The Uses of Argument*. Toulmin maintained that two arguments are in the same field if their data and claims (conclusions) are of the same *logical type* (see Sect. 4.4 of this volume). The difficulty is, however, that he did not define the notion of "logical type," but only indicated its meaning by means of examples. Toulmin suggested that some features or characteristics of argument are field invariant while others are field dependent. While in *Human*

³⁷ A relatively new area of research, which is still in a stage of development, is argumentation in visual communication. Cara Finnigan, for one, studies persuasive uses in photography. In Finnegan (2003), she focuses on arguing for claims about photographs' relationship to truth or nature.

Understanding Toulmin (1972) had already moved away from this notion of fields and had come to regard them as akin to academic disciplines, some argumentation theorists still found the idea of argument fields useful for distinguishing between field-invariant aspects of argument and aspects of argument that vary from field to field.

With the introduction of *field* into argumentation theory, two important questions arose. First, which characteristics or aspects of argument should be examined to determine whether they are field invariant or field dependent? Should the examination concentrate on the components of an argument such as the reasoning, the data, the claims, and the qualifiers? On procedures (rules, presumption)? On styles of arguing and argumentative strategies? Second, can the difference between fields be determined? To answer the preliminary question of what makes up a field, one option is to follow the suggestion made by Toulmin's (1972) in *Human Understanding* that field is to be defined as an academic discipline. This choice, however, leads to new problems, such as to what field a discussion about medical economics belongs. Argument fields could also be distinguished by looking at the audiences, situations, or political preferences involved.³⁸ The problem of argument fields becomes even more complicated when we consider the various questions in combination. Is it, for instance, possible that procedures vary according to audience?

Most contributions to the theory of argument fields seem to pay attention to the basic questions just mentioned. Zarefsky (1992, p. 417), for one, suggests that the concept of field offers considerable promise for empirical and critical studies of argumentation. This is why he tries to dispel the confusion about the idea of field without abandoning the concept altogether. Zarefsky identifies and discusses three recurrent issues in theories about argument fields: the purpose of the concept of argument fields, the nature of argument fields, and the development of argument fields.

The term *argument fields* functions, varying from author to author, as a synonym for *rhetorical communities*, *discourse communities*, *conceptual ecologies*, *collective mentalities*, *disciplines*, and *professions*. The core idea is that claims imply "grounds," and that the grounds for knowledge claims lie in the epistemic practices and states of consensus in specific knowledge domains. We thus interpret the advocates' positions by inferring the kinds of backgrounds they presuppose: the traditions, practices, ideas, texts, and methods of particular groups (Dunbar 1986; Sillars 1981). If someone says, for instance, that "physical processes are characterized by extreme sensitivity to starting conditions," and the field theorist concludes that the claim takes its meaning from chaos physics, a specific, concrete imputation is made to a definite group.

³⁸ Zarefsky notes an extensive discussion at conferences on whether fields should be defined in terms of academic disciplines or in terms of broad-based worldviews (such as Marxism and behaviorism) (2012, p. 211).

Willard advocates a sociological-rhetorical version of the field theory. Fields are “sociological entities whose unity stems from practices” (1982, p. 75). Consistent with the Chicago School, Willard defines fields as existing in the actions of the members of a field. These actions are essentially rhetorical. “This means that every field’s standards take their authority from the faith people have in them, that a retreat to commitment occurs when standards are challenged, and that fields can be seen as *audiences*” (1982, p. 76). Later on, Willard (1992, p. 437) stresses the beneficial consequences of the vagueness of the notion of fields: it is arguably its diffuse and open-ended nature that has been its most attractive feature, and the notion of field owes its widespread employment to the fact that it can be made to say virtually anything. Willard identifies and explores the minimal conditions required for the notion of argument fields to be useful.

Robert C. Rowland (1992, p. 470) also addresses the meaning and the utility of argument fields. He identifies the various interpretations of the notion of argument fields and suggests that none of them are completely satisfactory because none of them take all the essential characteristics of fields of argument into account. Rowland mentions four characteristics that distinguish fields: formality, precision of measurement, modes of dispute resolution, and ultimate goal. He argues for a purpose-centered view of argument fields. The essential characteristics of an argument field are best described by identifying the purpose shared by members of the field. The purpose of legal decision-making about insanity, for instance, is to balance the right to liberty of the individual and society’s right to protection from the insane, while the purpose of the psychiatric field is to treat the patient as effectively as possible. Specific purposes produce fields with specific evaluative criteria and very predictable argumentative characteristics, while fields which serve more general purposes can only be described in general terms (Rowland 1992, p. 497).

A notion similar but not equal to *argument field* is *argument sphere*, introduced by Goodnight in 1982 in a contribution to a special issue on argument fields of the *Journal of the American Forensic Association*.³⁹ As Rowland (2012) observes, unlike argument fields, which are no longer “core topics” within argument studies, argument spheres are still very important (p. 195).⁴⁰ According to Goodnight, members of “societies” and “historical cultures” participate in vast, and not altogether coherent, superstructures which invite them to channel doubts through prevailing discourse practices. In the democratic tradition, these channels can be recognized as the *personal*, the *technical*, and the *public* spheres. Inspired by Habermas and the Frankfurt School, Goodnight introduces the notion of argument spheres to show that the quality of public deliberation has atrophied since arguments drawn from the private and technical spheres, which operate through very different forms of invention and subject matter selection, have invaded, and perhaps even appropriated, the public sphere. As a consequence,

³⁹ For a collection of papers devoted to spheres of argument, see Gronbeck (1989).

⁴⁰ See Goodnight (1980, 1982, 1987a, b).

the quality of deliberation as a means for determining social knowledge and the public good has been undermined and impoverished.

Although Goodnight does not reject the notion of argument field, he finds it “not a satisfactory umbrella for covering the grounding of all arguments” (2012, p. 209). The idea that all arguments are “grounded in fields, enterprises characterized by some degree of specialization and compactness, contravenes an essential distinction among groundings” (2012, p. 209). “Spheres” do not denote perspectives or communities, but argument practices or “branches of activity – the grounds upon which arguments are built and the authorities to which arguers appeal” (2012, p. 200).

Each sphere comes with specific practices. Goodnight does not present a complete list of practices or a list of their defining properties but offers some examples.⁴¹ In the practice of simple conversation in the public sphere, the statements of the arguers are ephemeral. No preparation is required, and the subject matter and range of the claims are decided by the disputants. Evidence is discovered within memory or adduced by pointing to whatever is at hand. Rules of argument emerge from the arguers’ general experience regarding discussion, ideas about fair judgment, etc. In contrast, in a scientific practice, the range of subject matter is narrowed down, and expertise is combined with formal rules of scholarly argument. The end result is the advance of a special kind of knowledge. In a dispute in the public sphere, the private and the technical dimensions of the disagreement become “relevant only insofar as they are made congruent with the practices of the public forums” (Goodnight 2012, p. 202). The demands for proof and the forms of reasoning will then not be as informal or fluid as they are in a personal disagreement. The forms of reason will be more common than the specialized demands of the particular professions. Finally, the interests of the public realm extend the stakes of argument beyond private needs and the needs of special communities to the interests of the entire community.

Spheres of argument differ from each other, for one thing, in the norms for reasonable argument that prevail. According to Goodnight (2012), such differences become clear, for instance, when we look at “the standards for arguments among friends versus those for judgments of academic arguments versus those of judging political disputes” (p. 200). The notions of private, technical, and public spheres are useful in describing the ways in which in making arguments disagreements can be created and extended. The public sphere is transcending the personal and technical spheres. This domain is not reducible to an argument practice of any specific group characterized by certain social customs or determined by a professional community, but may nevertheless be influenced by such factors. The consequences of the dispute extend beyond differences of opinion in the personal and technical spheres.

Zarefsky (2012, pp. 212–213) proposes a taxonomical scheme for spheres which consists of the following distinguishing criteria: (1) Who participates in the

⁴¹ Cf. these practices with the pragma-dialectical “communicative activity types” discussed in Sect. 10.9 of this volume.

discourse? (2) Who sets the rules of procedure? (3) What kind of knowledge is required? (4) How are the contributions to be evaluated? (5) What is the end result of the deliberation?

In the personal sphere, only those who have a particular personal relationship should participate. The participants set the rules of procedure: they decide on the subject matter, the range of the claims, and the progression of the deliberation. No technical or generally accepted claims are required. The participants judge the contributions by their own experience. The argumentation affects only those participating in the interaction.

In the technical sphere, only those who can be taken to be experts concerning the issues in the conflict may take part. The rules of procedure are set by the participants and the deliberation requires some special kind of (technical or specialized) knowledge. The conventions of the particular field supply the standards for argument evaluation. The outcome of the deliberation affects more people than just the participants (Zarefsky 2012, p. 213).

In the public sphere, participation is regulated according to conventional rules. No special training is required to participate. The rules of procedure are usually highly conventionalized. The standard of evaluation is the “social knowledge” of the public. The deliberation affects everyone within the community.

Goodnight (2012) suggests that the grounds of argument may be altered over time: a way of arguing appropriate to a given sphere can be shifted to a new grounding. This means that spheres start to intermingle. Matters of private dispute can then take on a public character and matters of public judgment can become subjected to the standards of scrutiny of the technical domain (saving the environment, the question of nuclear energy). Goodnight’s concern is that the public sphere is “being steadily eroded by the elevation of the personal and technical groundings of argument” (2012, p. 205). Operations of public administrations become increasingly technical in nature, while Goodnight finds it doubtful whether the general technical knowledge has become any more refined through time. With expanding communication technology, the media show us stories about individuals which do not enable us to make a good assessment. Politicians and experts have used arguments grounded in the personal sphere in order to display an aura of false intimacy.

Deliberative rhetoric is a form of argumentation through which citizens test and create social knowledge in order to uncover, assess, and resolve shared problems. It is always possible for the art of deliberative rhetoric to atrophy. Forms of social persuasion have taken over the art of deliberative argument, and this may make deliberative argument a lost art (Goodnight 2012, p. 189). To stop deliberative argument from becoming a lost art, argumentation theorists should uncover and critique the practices that replace deliberative argument.⁴²

⁴² Palczewski (2002), too, is worried about the loss of capacities of argument and reason to resolve conflicts. Following other feminist communication scholars, she critiques argument as overly violent and counterproductive. As an alternative to the war metaphors that are according to her predominant in argument, she offers the metaphor of argument as play, hoping that this will make argument more productive.

The overall dominance of technical discourses is also a concern for Goodnight. Where Dewey viewed technical discourses with more hope than skepticism, Goodnight, like Habermas, holds that the public sphere is co-opted by technical specialism and the disciplinary control of knowledge (Lyne 1983). In emphasizing this point, Goodnight's work has sparked a recent focus on fusion discourse cases in which technical argument intrudes upon (or is harmed by) public discourse.⁴³ This is in a way a story of necessary evils. A complex world requires specialism and the languages of technique, but instrumental rationality, so it is claimed, has also brought us to the nadir of human possibility: Auschwitz, environmental disaster, starvation, and – looming over them all – the prospects of a nuclear coda to history. The problem is that, while technical knowledge has burgeoned, it is uncertain that the general knowledge necessary to govern a republic of citizens has become any more refined (Goodnight 1982, p. 224).

While the notion of “argument field” seems to be abandoned, argumentation scholars still frequently use the notion of “sphere.”⁴⁴ Schiappa (2012), for instance, compares and contrasts in his research the arguments advanced in the technical sphere of legal and constitutional debate with those used in the public sphere. He shows how the norms and practices of constitutional argument filter out specific arguments, particularly fear appeals and claims based on religious beliefs, which are prevalent in the public argument (Schiappa 2012, pp. 216–230).

James F. Klumpp, Patricia Riley, and Thomas Hollihan (1995) express their concerns about the state of the public sphere when it comes to “construct ‘community’ locally or globally, and to organize a forum that provides an ethical voice in deliberation” (p. 319). Their worries relate to the increasing cynicism of populations towards their governments, the increasing disparity between rich and poor, and the seeming impotence of government in addressing pragmatic problems. They label these conditions “the post-political age” (p. 319). Factors such as the transformation of politics into a technology of personality and the increasing poser of economic organization are seen as causes of the erosion of the political sphere.

Klumpp, Riley, and Hollihan believe that “a focus on democracy will both encourage a beneficial reinterpretation of democratic rationality and provide a clearer vision of the current crisis in the public sphere. To implement this

⁴³ See Balthrop (1989), Biesecker (1989), Birdsell (1989), Dauber (1989), Holmquest (1989), Hynes (1989), Peters (1989), and Schiappa (1989).

⁴⁴ Mandziuk (2011), for one, analyzes the use of memorials and antimemorials in arguments in the public sphere. In the complex realm of public discourse and argument, memorials are supposed to commemorate a particular thread of memory. Such statues, monuments, or other objects are designed and located in public to communicate a set of values and an official version of the past. Yet, in response to such public memorials, often art and objects are located or circulated that challenge the dominant discourse about history and remembrance. These “counter-memorials” – sometimes also called “antimemorials” or “countermonuments” – function as sites of contestation, locating arguments in the public sphere that seek to discount, amend, or reinscribe the past in alternative ways, thus directly challenging the idea that a single public memory is possible.

reoriented focus, [they] extract three humanistic commitments from current critical-rational ideals.” These are (1) choice (in contrast to technical rationality and system efficiency), (2) broad community participation, and (3) a healthy public sphere. The latter dictates an effective argumentative praxis (1995, p. 320).

Another example of a study of argumentation pertaining to a (section of a) specific sphere is Goodnight and Kara Gilbert’s (2012) examination of argumentation in the medical sphere. They claim that the field of medical practice is influenced by biopolitics, an expanding domain of global controversies over health and medicine. The growth of direct-to-consumer advertising raises questions of influence upon doctor-patient communication. They make the case for critical inquiry to advance competent, clinical communication practices.

Nicholas Paliewicz (2012) argues that, in order to protect the role of the public and that of the technical sphere from duplicitous contestation, interlocutors in the public sphere should apply unique standards to evaluate the authenticity and worth of technical claims advanced in the public sphere. He suggests that three conditions should apply for technical claims to be legitimized for public use: (1) scientific communities should be in consensus; (2) scientific communities should not produce research contaminated with motives other than doing the best science; (3) scientific communities should not be corrupt in conduct. Global warming is a unique example where the claims of the international scientific community have met all three conditions. All the same, skeptics in the public sphere still have argumentative presumption in the debate (Paliewicz 2012, pp. 231–242).

Michael Hazen and Thomas Hynes (2011) focus on the functioning of argument in the public and private spheres of communication (or as they call them, “domains”) in different forms of society. While an extensive literature exists on the role of argument in democracy and the public sphere, there is no corresponding literature regarding nondemocratic societies. They explore the structure and functions of argument in three prototype models of the relationship between the public and private spheres of communication. Model 1 (societies where the public sphere dominates) represents a society where there is no clear separation between the two spheres and the public sphere dominates the private sphere. In this situation, not only is private information and communication made known to others, it is also expected to conform to the forms and logic of the public sphere and be judged by the norms of that sphere. Some theorists suggest that this model may relate in particular to authoritarian societies. Model 2 (societies where the private sphere dominates) differs in the sense that society and the public sphere are dominated by the private communicative sphere. Model 3 (societies where the private sphere is separate from the public sphere) is characterized by a clear separation between the public and private spheres of communication. In other words, the discourse standards and patterns of the domain remain separate, and standards from the one sphere are not used to judge the other.

8.7 Normative Pragmatics

Scott Jacobs, Fred Kauffeld, and Jean Goodwin are the most prominent advocates of an approach to argumentative discourse they call *normative pragmatics*.⁴⁵ Normative pragmatics does not so much refer to an active movement with members publishing regularly together as to a type of research focusing on the linguistic pragmatics of argumentation.⁴⁶ Normative pragmatics denotes a general perspective on argumentative discourse rather than a specific theoretical approach with shared methodological starting points. Broadly speaking, normative pragmatics concentrates on the norms that language users actually apply in dealing with argumentative language. The scholars involved share a preference for Gricean analysis and a dislike of Searlean felicity conditions for speech acts and theoretically induced external norms for argumentation.⁴⁷

According to the outline of normative pragmatic research sketched by Jacobs (1998), argumentation theory is dominated by formal and informal models of argument which are only useful for theorists concerned with the properties of arguments these models are designed to highlight, such as premise acceptability, argument strength, and inferential form. About “interpretative meaning,” “procedural organization,” and “situational adaptation,” the models have nothing to say (p. 397). This is why a different approach to argumentation is needed, not so much as a replacement of traditional approaches, but as a corrective (p. 403). In a normative pragmatic approach, argumentation is seen as a linguistic phenomenon that should be analyzed by taking all the details of actual messages into account.

Two points are of primary importance to Jacobs in this approach. First, normative pragmatics engages in a study of the properties of actual argumentative messages: the *expressive design* of argumentation. Second, normative pragmatics has as its central concern the analysis and assessment of the strategic or functional properties of argumentative messages: the *functional design* of argumentation.

According to Jacobs, the problem of reconstructing arguments has been dealt with in argumentation theory as a problem of refashioning stated propositions, filling in missing premises, and drawing out implied conclusions, without enough

⁴⁵ Jacobs favors the term *normative pragmatics*, which was coined by van Eemeren (1990), because it “cuts across the old distinctions between rhetoric and dialectic and because it insists on attention to the uses of argument in ordinary language [...]. The term points to analytic practices that are empirical in much the same sense that the broader field of discourse studies is empirical: Our theories and principles ought to be accountable to the actual practices and intuitions of natural language users” (1998, p. 397).

⁴⁶ In the term *normative pragmatics*, *pragmatics* refers to the study of language use by means of Gricean and Searlean pragmatic approaches. Because of its strong emphasis on pragmatic analysis, normative pragmatics has a lot of commonalities with pragma-dialectics. An important difference is that pragma-dialectics also includes a theoretically motivated evaluative approach of argumentation while normative pragmatics tends to stick to a descriptive approach to argumentative language use, without any external normative regulation.

⁴⁷ Jacobs is not entirely against felicity conditions; he doubts whether there is a strict relationship between a set of felicity conditions and a category of speech acts.

sensitivity to the “total message” that is conveyed. Argumentation scholars tend to treat vagueness and other complexities not so much as parts of the message but as hindrances that should be overcome to get to an adequate interpretation. Jacobs prefers seeing these interpretive problems of communication as an analytic puzzle, “not as a barrier to analysis, not as a predicament, but as a thing to be analysed, as a fact to be explained” (1998, p. 398).

For Jacobs the “words are not the message,” and the message is not what has been literally said (1998, p. 398).⁴⁸ The information a message conveys is not limited to what can be extracted from the sentences by relying on rules of syntax, semantics, and logic – and the information that can be gained by other means should not be discounted or dissolved. When people interpret a message, they construct a context of assumptions and inferences that makes sense of what is said, of what is not said but could have been said, and of how and when all of it is said. The words and sentences are simply part of an assembly of cues that people use to construct the message. The context of interpretive assumptions and inferences plays a part in providing the message. By means of a series of examples, Jacobs shows how meaning is conveyed and how this meaning is “triggered” by the pragmatic assumptions people rely on in reconstructing a message.

Apart from an expressive design, arguments have a functional design: “Their meanings are implicated in chains of social and cognitive consequences that have a bearing on the deliberative process” (Jacobs 1998, p. 400). Argumentative messages may be designed either to encourage or to discourage critical scrutiny of the justification of positions and alternative positions. According to Jacobs, there is a close connection between the expressive design of messages and their functional design: “Much of the functional design of arguments has to do not just with what is said when, but with how the information gets conveyed” (1998, p. 401).

Understanding the functional design is the key to seeing what makes a contribution useful or obstructive to the decision-making process. The pragmatic problems and solutions of argumentative practice do not only relate to discourse norms (as in traditional accounts) but also to discourse strategy – they are situated at the level of inferential schemes as well as at the level of institutional procedures.⁴⁹ Argumentative messages may be designed either to open up a free and fair exchange of information or to close it down. According to Jacobs, argumentation theory should be concerned with the way in which argumentative messages enhance or diminish the conditions for their own reception.

An important insight emphasized in normative pragmatics is that argumentation is a “self-regulating activity”:

⁴⁸ In this respect, the approach favored in normative pragmatics is similar to the pragma-dialectical approach. There are a great many other similarities.

⁴⁹ One such institutional context Jacobs is interested in is third-party dispute mediation: “As a system of dispute resolution, mediation creates a context in which certain ways of arguing are reasonable and functionally constructive and in which other ways of arguing are not” (1998, p. 400).

Argumentative discourse can function not merely to persuade, but also to encourage mutual, voluntary, free, comprehensive, open, fair, impartial, considered, reasoned, informed, reflective, and involved engagement. On this view, the problems of how to determine the substance of good reasons, the form of good reasoning, and the status of any conclusion are all, to a large degree, left open to those deliberating the issue. (Jacobs 2000, p. 274)

From the perspective of normative pragmatics, the *effectiveness* of argumentation is to be judged in terms of whether the discourse puts the interlocutors in a position to decide if the claims that are made should be reasonably accepted or rejected. The effectiveness is not to be judged in terms of whether or not the interlocutors accept a claim, or even whether they come to agree on its (un)acceptability. This change of standard involves a decisive departure from the identification of argument functions with the intentions and interests of individual arguers (Jacobs 2000, p. 275).

According to Jacobs, so far neither the rhetorical nor the dialectical tradition of analysis has fully capitalized on their common insight that argumentation occurs as a discursive process. He believes that normative pragmatics provides a *third term* (next to dialectic and rhetoric) that might synthesize the differences between dialectical and rhetorical theory in a way which saves the central insights of both (2000, p. 262).

At the heart of a rhetorical analysis lies an emphasis on rhetorical design of messages. In modern rhetoric, however, all types of symbolic inducements tend to be seen as arguments. Without systematic theoretical modeling, says Jacobs, it therefore looks like there is nothing systematic to model. Dialectical theorists, on the other hand, have tended to see nothing but arguments in messages. According to Jacobs, they are inclined to neglect information that does not express assertive force, propositional content, and canonical inferential structure. And when they extend their interests to ordinary language, they take all too readily (and literally) any utterance as (directly or indirectly) expressing an assertion in declarative sentence form (Jacobs 2000, p. 264). This is one of the real dangers involved in the dialectical tradition, especially since dialectical theory looks towards logic for its conceptualization of message form and content: there is a strong impulse to “rationalize” messages in ways that overlook strategic technique and a tendency to describe what *is* being said in terms of normative models of what *should* be said – or else to ignore it altogether. Either way, when messages are described in presumptive model form, nonargument and bad argument tend to get ignored. According to Jacobs, normative pragmatics offers a perspective on argumentative discourse that overcomes these problems.

Beth Innocenti Manolescu (2006) claims that a normative pragmatic perspective offers a more complete account of rhetorical strategies like appealing to emotions in argumentation than does a pragma-dialectical, informal logical, or rhetorical perspective alone. In her view, appealing to emotions in argumentation may be relevant and non-manipulative. It can be analyzed as a strategy that creates “pragmatic reasons.” She illustrates the explanatory potential of normative pragmatics by analyzing and evaluating the argumentation in Frederick Douglass’s

What to the Slave is the Fourth of July. In this endeavor, she broadens the concept of argumentation considerably.

A normative pragmatic perspective on appealing to emotions in argumentation has a number of characteristics that distinguish it from other approaches. First, normative pragmatic researchers assess emotional appeals as they are actually presented rather than after first reconstructing the discourse as a premise-conclusion complex. They do not define argumentation as something to be abstracted from a discourse but as an activity that may involve not only reason giving but also a host of other strategies, such as appealing to emotions, vividly describing, repeating, and so on, which a theory of argumentation ought to explain (Jacobs 2000, p. 265).

A second characteristic of normative pragmatics is that discourse strategies are taken to create pragmatic reasons. A distinction is made between reasons *given in* an argument and reasons *created by* an act. Reasons *given* yield what is normally considered putting forward argumentation. Reasons created by an act are the pragmatic reasons involved in the act. Pragmatic reasons are created by means of certain strategies.

Innocenti Manolescu mentions a few examples of strategies that create pragmatic reasons. One is alluding to an authoritative document, like the American Declaration of Independence. When confronted with such a document, the addressees may reason that (other things being equal) they cannot deny the premise without risking criticism for ignorance about this specific authoritative document. This is a pragmatic reason for acknowledging premise adequacy. Another strategy an arguer can use is reason giving. What pragmatic reasons does the strategy of reason giving create for addressees to adhere strongly to an antislavery position? Other things being equal, an addressee cannot deny the conclusion without taking the risk of being criticized for being irrational. Denying the conclusion would be a fallible sign that the addressee does not “see” a logical connection between the premise and the conclusion, and we may presume that the addressee wants to appear to hold a rational position. Thus the strategy (or act) of reason giving creates (or gives) a pragmatic reason to addressees for holding the standpoint.

Jean Goodwin does not provide any definitions or explanations of normative pragmatics but restricts herself to exploring “rather experimentally” what normative pragmatics might look like (2005, p. 100). The result of her exploration is that normative pragmatics proves to be a description of norms actually used by arguers in different contexts. Goodwin examines the practical strategies arguers use to establish adequate starting points for their arguing. Following the rhetorical tradition, she takes up normative pragmatic case studies of premises in two contexts: forensic (courtroom) arguing and deliberative (public policy) arguing. In a forensic situation, the norm for premise adequacy in closing arguments is strict: representations of facts “must be based solely upon the matters of fact of which evidence has already been introduced” (Goodwin 2005, p. 101). In a deliberative context, premises are adequate when they are “beyond criticism” (Goodwin 2005, p. 109). However, what makes a premise beyond criticism appears to vary.

In her provocative essay “Argumentation has no function,” Goodwin (2007) turns against what she calls *functionalist* accounts of argumentation. According to such accounts, arguments should be understood and assessed by considering the functions they perform. Goodwin maintains that argument has no determinable function in that sense, and even if it did, that function would not ground norms for argumentative practice.

Fred Kauffeld relies on a Gricean account of speech acts connected with a combined dialectical and rhetorical view of argumentation. He is especially interested in the way in which in everyday verbal interaction a burden of proof is incurred. According to Kauffeld (2009), a burden of proof is a special kind of probative obligation. Probative obligations are incurred in conformity with the Principle of Pragmatically Incurred Obligations: in serious human communication, pragmatically necessary presumptions are strategically engaged by openly manifesting addressee-regarding intentions and, thereby, incurring corresponding obligations (p. 8).

Kauffeld (1998) warns against the transference of a legal concept of presumption to other (ordinary) kinds of argumentation, such as deliberation about future acts and policies. Comparison of the pragmatic characteristics of the illocutionary acts of *accusing* and *proposing* reveals important differences in the ways presumptions prompt accusers and proposers to undertake probative responsibilities and also points to corresponding differences in their probative duties. This leads to the question of whether the distribution of probative responsibilities in deliberative argumentation responds to considerations which differ fundamentally from those applying to judicial argumentation (Kauffeld 1998, p. 259).

After having given an analysis of the illocutionary acts of proposing and accusing, Kauffeld observes some basic similarities between the genesis of the burdens of proof in the two types of situations (deliberative argumentation and judicial argumentation). Characteristically, in both *proposing* and *accusing*, argumentative responsibilities are undertaken because doubt, disagreement, distrust, or opposition stands to impair the efficacy of the statements concerned. The problems which typically animate proposing and accusing arise because the presumption of veracity – upon which statements fundamentally depend for their efficacy – does not carry enough practical weight to fulfill the speaker’s purpose in the face of doubt, disagreement, evasion, or opposition.

Beyond these basic similarities, there are deep differences in the genesis of probative responsibilities in *proposing* as contrasted with *accusing*. First, there is an essential difference in how probative responsibilities are incurred in these illocutionary acts. The proposer openly takes on a burden of proof as part of what is essential to the performance of the illocutionary act of proposing; the accuser typically incurs probative responsibilities as a consequence of what he or she must do at a minimum to make an accusation. Second, a contrast should be noted in the nature of effects aimed for in the actions typically performed by speakers in these two types of communicative exchanges. The proposer characteristically tries to induce tentative consideration from the addressee; the accuser characteristically tries to impose an obligation on the party that is addressed. Thus, the inception of

probative responsibilities in these two kinds of illocutionary acts differs both with respect to how the burdens of proof are incurred and with respect to the nature of the considerations which generate probative burdens (Kauffeld 1998, p. 260).

8.8 Argumentation in Persuasion Research

In *Persuasion*, his influential monograph, Daniel O’Keefe (2002) defines persuasion as “a successful intentional effort at influencing another’s mental state through communication in a circumstance in which the persuadee has some measure of freedom” (p. 5). In this definition, “mental state” can be equated with *attitude*: “a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour” (Eagly and Chaiken 1993, p. 1). Persuasion research focuses on *attitude change*. However, because of the practical aspirations of this kind of research, its end goal is not just attitude change but attitude change with a view to changing behavior.

Persuasion research is carried out in a variety of fields and disciplines, including communication studies. Most persuasion research is experimental: persuasive effectiveness is studied under systematically controlled conditions (O’Keefe 2002, p. 169). Not many full-fledged theories of persuasion have been developed, let alone a general unifying theory.

In principle, persuasion research can be about any communicative factor which may be of influence to attitude change. Argumentation is just one of them. In his monograph, O’Keefe gives a systematic description of a series of factors that are possible determinants of attitude change: source factors (Who attempts to persuade?), message factors (What is said in the persuasive attempt?), and receiver and context factors (Who is persuaded in what situation?).

On closer inspection, the messages studied in the category “message factors” are predominantly argumentative, while the factors examined in the other two categories are only indirectly related to argumentation. Nevertheless, most persuasion researchers do not acknowledge the argumentative character of the messages under investigation. In persuasion research, hardly any reference is made to argumentation theory that could shed light on the crucial role of argument types, argument strength, and other factors theoretically accounted for in argumentation theory.⁵⁰

In message factor research, three types of research can be distinguished: “message structure” research, “message content” research, and “sequential strategies” research. *Message structure* research includes, for example, studies regarding the order of arguments. Several empirical studies have been carried out to examine the relative effectiveness of specific ways of ordering the arguments. One of these ways is climax ordering versus anticlimax ordering. The choice between these two ways

⁵⁰ O’Keefe and Jackson (1995) stress the need for paying more attention to argumentation theory to enhance the quality of persuasion research. One important consideration is that argument quality should be assessed by using norms that are theoretically motivated.

of arranging the arguments in a message seems to be of little consequence: varying the order makes hardly any difference to the overall persuasive effectiveness. Only in one study the climax order proved to be more persuasive, in a statistically significant sense. When nonsignificant differences were found, the direction of effect has generally (but not always) favored the climax order, but the observed differences were only small in every case (O'Keefe 2002, p. 216).

In some other message structure studies, the focus is on omitting the conclusion: Is leaving out the conclusion (the standpoint) in the presentation of a persuasive message an effective technique? Intuitively, there seem to be good reasons in favor of each of the alternatives (O'Keefe 2002, p. 216). One might think, for instance, that making the conclusion explicit would be the best presentational option because receivers would then be less likely to misunderstand the point of the message, and being clear can be of importance in the persuasive process. On the other hand, if the communicator simply supplies the premises for a conclusion and receivers have to reconstruct the conclusion and reasons to the conclusion in their own way, they will maybe be more easily persuaded.

In some studies, explicit conclusions or recommendations are found to be more persuasive. A possible explanation of these findings is that omitting the conclusion is only effective when the audience is really capable of reconstructing the intended conclusion. Not much empirical evidence has been found for the correctness of this explanation. According to O'Keefe, "the expectation has been that explicit conclusions may not be necessary to, and might even impair, persuasive success for intellectually more capable audiences and for audiences initially favourable to the advocated view" (2002, p. 217). Hardly any support is found for these speculations. A possible explanation of the persuasive advantage of explicitly stated conclusions is that assimilation and contrast effects are encouraged when the conclusion is omitted:

Assimilation and contrast effects are perceptual distortions concerning what position is being advocated by a message. An assimilation effect occurs when a receiver perceives the message to advocate a view closer to his or her own than it actually does; a contrast effect occurs when a receiver perceives the message to advocate a position more discrepant from his or her own than it actually does. (O'Keefe 2002, p. 218)

Another type of persuasive factor having to do with message structure is message specificity. Messages can vary in the specificity or concreteness of the description of the action that is advocated. Messages with more specific descriptions of the recommended action (recommendation specificity) are more persuasive than messages providing general, nonspecific recommendations. Experimental findings show that messages with practical (prescriptive) standpoints which are formulated in a more specific and concrete way tend to be more effective than messages with standpoints formulated in a nonspecific way.

Research regarding *message content* is mostly about the type of argumentation that is used. An example is the research concentrating on one-sided messages versus two-sided messages. In one-sided messages, arguers put forward arguments that can be seen as direct support for their conclusion, while in two-sided messages, they

discuss their own direct arguments as well as possible counterarguments against their own conclusion.⁵¹

Generally speaking, there appears to be no difference in persuasiveness between one-sided messages and two-sided messages. This means that there is no general persuasive advantage to be gained by either ignoring or discussing opposing arguments. A more complex picture emerges however if two varieties of two-sided messages are distinguished, corresponding to two different ways in which a message might deal with opposing arguments. These two types of two-sided messages have a dramatically different persuasive effect compared with one-sided messages. Arguers may mention possible counterarguments against their own claim and subsequently try to refute those counterarguments. They may also just mention possible counterarguments, without refuting them. Refutational two-sided messages in particular are more persuasive than one-sided messages. Non-refutational two-sided messages, on the other hand, are significantly less persuasive than their one-sided counterparts (O’Keefe 2002, p. 220).

A widely studied type of argumentation is “fear appeal,” which from an argumentation theoretical perspective should be seen as a special type of pragmatic argumentation: the receiver should act in a certain way because fearful consequences will follow if this does not happen. A problem in research of fear appeals is that there are “two fundamentally different –and easily confused ways of conceiving of the variation in fear appeals” (O’Keefe 2002, p. 224). One way of defining variations in the strength of fear appeals is referring to the way in which the fearful consequence is depicted (fear appeal contents): in a very vivid way or in a less vivid, toned-down version. Another way is referring to the degree of fear that is actually aroused in the audience.

The various experimental results indicate that messages with more intense (more vivid) contents do generally arouse more fear. However, influencing the receiver’s level of fear is not something easily accomplished. Furthermore, messages with stronger fear appeal contents are more persuasive than messages with weaker contents, and messages that arouse more fear are also more persuasive than messages arousing less fear (O’Keefe 2002, p. 225).

A last, typical specimen of a message content study is research concerning the effectiveness of providing examples versus the effectiveness of providing statistical analysis. In an example, some instances are described in detail, while in a statistical analysis, a quantitative summary of a large number of instances is given. The quantitative presentation is more informative than the example. The example, however, can be more persuasive. Unfortunately, the experimental results are not consistent: some studies found statistical analysis to be more persuasive than the use of an example, while other studies found exactly the opposite.⁵² These

⁵¹ Amjarso (2010) studied this problem from a pragma-dialectical perspective, referring to the notion of “dialectical strength” to describe the difference between one-sidedness and two-sidedness in a theoretical way.

⁵² See Hoeken (1999).

contradicting results may be due to the fact that in the research too little attention has been paid to the argumentative properties of these types of messages. The nature of the conclusion (descriptive or prescriptive) and the argument scheme that was used in the argumentation are, for instance, not systematically taken into account.

There is no unifying theory of persuasion that makes it possible to systematically construct testable hypotheses about the effectiveness of argumentative moves. As a consequence, most of the experimental studies of argumentation in persuasion are *ad hoc*.⁵³ However, there are some exceptions in which an account of persuasion is provided. The most prominent of these is the Elaborate Likelihood Model (ELM) developed by Richard Petty and John Cacioppo (1986a). These authors specify two qualitatively different routes to persuasion. Petty and Cacioppo assume that people desire to attain correct attitudes, but that the extent and nature of their processing of persuasive arguments depends upon their motivation and ability. Elaboration refers to the extent to which people think about issue-relevant arguments contained in persuasive messages. Elaboration likelihood is high when the situation and the individual characteristics ensure big motivation and ability of issue-relevant thinking. As a consequence, the probability is high that recipients then follow the *central route*, which involves argument scrutiny.⁵⁴ When motivation or ability for elaboration is low, attitudes are formed and changed, but now the recipients will follow the *peripheral route* to persuasion. The mechanisms applied in the peripheral route include cognitive mechanisms such as heuristic processing and attributional reasoning, affective mechanisms such as classical and operant conditioning, and social role mechanisms such as maintaining social relationships and favorable self-identities (Eagly and Chaiken 1993, p. 307). Attitude changes that result mostly from processing issue-relevant arguments (central route) will show greater temporal persistence, greater prediction of behavior, and greater resistance to counter-persuasion than attitude changes that result mostly from peripheral cues (Petty and Cacioppo 1986b, pp. 175–176). This would imply that argumentation leads to better sustained attitude changes.

It is not always clear whether a certain variable should be regarded as part of a central mechanism or a peripheral mechanism. Under high elaboration, a given message (e.g., source expertise) can serve as an argument (by authority), while under conditions of low elaboration, the same message can act as a peripheral cue. This means that the decisive criterion for establishing whether a message belongs to one of the two routes is elaboration, not whether a message can be seen as argumentative or not argumentative.

⁵³ O’Keefe (2002) describes influential theories that are not about persuasion proper but have been and still are influential. They include attitude theories, cognitive dissonance theory, and theories of behavioral intention.

⁵⁴ The Elaborate Likelihood Model can be seen as an attempt to place existing persuasion theory and research under one conceptual umbrella: most attitude theories can be viewed as exemplifying one or the other route (Eagly and Chaiken 1993, p. 306).

8.9 Argumentation in Interpersonal Communication

Interpersonal arguments are analyzed to determine the strategies and effects of a variety of argumentative routines used in negotiating disagreements. How do persons start and end disagreements? How do issues change what rules participants apply? What are the effects of arguments on relationships? What are the strategies used to increase or reduce disagreements? Interpersonal arguments can occur in a variety of places: among friends, within families, within marital dyads, between coworkers, and between romantic partners. All these cases are studied.

Compared to the study of public discourse, the study of interpersonal arguments is relatively new. Broadly speaking, two types of research can be distinguished. First, there is *conversation analysis* of argumentative discourse that is primarily analytic. Second, there are *empirical studies*.

In the 1980s, Sally Jackson and Scott Jacobs conducted an ongoing research program for studying argumentation in informal conversations.⁵⁵ In their research on argumentation in conversation, they offer a speech act perspective: their analysis of argumentative discourse is based on a model in which speech acts function as means to accomplish broader goals.⁵⁶ Jackson and Jacobs's research is aimed at tracing the knowledge needed to "play the game" of communication. The formalized representations of such knowledge are known as *structural models* of discourse. A descriptively adequate structural model provides a summary of what can be seen happening in naturally produced discourse. A structural model is explanatory if it allows the analyst to account for particular events, practices, patterns, or properties as "following from" rational applications of the rules of the game (Jacobs and Jackson 1989, p. 153).

Jackson and Jacobs start from three methodological preferences.⁵⁷ Their first preference is a commitment to *naturalism*. The starting point of the research should be a database consisting of naturally occurring talk, instead of material invented by the researcher. Their second preference is for *direct inspection of the details of actual discourse*. Instead of applying categorical coding schemes that render discourse into sequences of act types stripped of details of content, Jackson and Jacobs prefer a method where concepts and categories emerge from, and can be justified by, detailed observation. Their third preference is for *inductive theory building* over deductive hypothesis testing. The research questions should emerge from an examination of the empirical details. A theory must account for important features of phenomena. These important features must be documented, and it

⁵⁵ For other studies of conversational argument, see Craig and Tracy (1983).

⁵⁶ See, for example, Jackson and Jacobs (1980, 1982), Jacobs and Jackson (1981, 1982, 1983, 1989), Jackson (1983, 1992), and Jacobs (1989).

⁵⁷ Jackson and Jacobs observe that their research methods have much in common with other social scientific approaches. The differences are that the object of study is argumentative discourse and that their model is structural rather than causal in nature.

should be established exactly what is puzzling about them before a theory can be constructed (1989, p. 155).

Jackson and Jacobs's ideas have evolved from a *sequencing model* of argumentative discourse, via a *speech act/conventional model*, to a *speech act/rational model*. The sequencing rules model they applied in their initial investigations of argumentative discourse attempts to build a "kind of grammar of argument by locating irreducible conventions that operate directly on the surface level of conversation" (1989, p. 156). Using this model presupposes that (1) the elements of a conversation structure are utterances, (2) utterances can be categorized into types of speech acts, and (3) the succession of utterances in conversation is determined by rules specifying what speech act types may meaningfully and appropriately follow a given speech act.

The sequencing rules model most prominent in Jackson and Jacob's writings follows from the turn-taking model developed by conversation analysts Sacks, Schegloff, and Jefferson (1974). It makes use of the idea of "adjacency pairs." *Adjacency pairs* are conventional pairings of utterances, such as question-answer and request-grant. These pairs exhibit two properties of sequential structure: *conditional relevance* and a structural *preference for agreement*. The adjacency pair concept provides the basis for distinguishing broader structural patterns, such as "presequential expansions" and "embedded expansions." According to Jackson and Jacobs, with the help of this model, argument can be seen as a kind of "repair and prepare" mechanism, designed to regulate the appearance of disagreement in a rule system aimed to prefer agreement. This way of modeling argument provides a generative mechanism flexible enough to avoid the more obvious anomalies of chain models of interaction applied in group discussion research. The concept of "structural expansion" also provides a way of studying the various organizational functions arguments might serve (Jacobs and Jackson 1989, p. 158).

Gradually Jackson and Jacobs became convinced that a purely structural analysis of argumentative conversation faces a number of problems. First, various kinds of coherent replies to first pair parts do not fit the category of a second pair part. Second, the concept of an "adjacency pair relation" does not provide an adequate basis for identifying pairs: there is no principled way of identifying which pair parts should be paired together and which should not be paired. Third, the adjacency pair analysis cannot explain what types of utterances can and cannot initiate an adjacency pair. Fourth, a sequencing rule model has no principled way of determining what utterances can and cannot be structurally subordinate expansions. And finally, there is an apparently limitless diversity of sequential expansions. The consequence of this is that no taxonomy of patterns can ever encompass all possible patterns (Jacobs and Jackson 1989, p. 161). These empirical problems involved in a sequencing rules approach suggest the need of a model attentive not only to structure but also to function – not only to performance but also to interpretation. Sequencing rules phenomena should be grounded in functional communication concepts provided by speech act theory (1989, p. 161).⁵⁸ Jackson and Jacobs call the functional model that is needed the *speech act/conventional model*.

⁵⁸ Jackson and Jacobs even believe that a speech act analysis of conversational argument makes an analysis in terms of sequencing rules superfluous.

Two aspects of the speech act perspective are particularly important: the idea of *felicity conditions* and the notions of *communicative intention* and *illocutionary force*. Felicity conditions offer a more principled basis for explaining the bonding or pair parts in adjacency pairs. According to Jackson and Jacobs, the first pair part and its second pair part will always have mirror-image felicity conditions. Felicity conditions not only structure pairwise bonding but also define presequences.

One problematic aspect of the speech act/conventional model is that people do not generally interpret and respond to others in terms of types of acts being performed, but in terms of perceived goals and plans of the communicator: ordinary conversation relies on assumptions about goals and plans as the basis for connections between utterances. This is the reason why Jackson and Jacobs opt for a rational version of the speech act model, the *speech acts/rational model*, in which conversation is seen as “a process of coordinating plans and negotiating meaning rather than as product of people interlocking their rules for issuing and interpreting actions” (Jacobs and Jackson 1989, p. 164).⁵⁹ Viewed from the perspective of this model, speech acts are conventional means for achieving goals that may themselves be subgoals in a broader structure of plan (p. 165). Over the years, Jackson and Jacobs’s work in discourse analysis has developed in this way closer to the pragma-dialectical perspective of van Eemeren and Grootendorst, with whom they collaborated on the monograph *Reconstructing Argumentative Discourse* (van Eemeren et al. 1993).

Robert Trapp (1990) has developed a model that describes interpersonal arguments as *serial arguments*. A serial argument consists of a series of argument episodes that are in some way related to one another. An argument episode begins with perceived incompatibility between participants. This incompatibility leads to confrontation. The confrontation leads to inventing and editing arguments and, eventually, to the actual process of arguing.

According to Trapp, interpersonal arguments have consequences that include argument resolution, positive or negative effects on relationships and self-concepts, conflict escalation or de-escalation, and possibly even physical violence. The consequences of argument episodes can be thought of as stopping places in the process. Arguers simply move from these stopping places back to antecedents and start the process over again (Trapp 1990, p. 51).

Kristen Johnson and Michael Roloff (2000) investigate how adopting the role of initiator versus resistor impacts experiences with and perceptions of a serial argument. The results of a survey they conducted of undergraduates in dating relationships indicate that initiators report that the initial argumentative episode resulted from an urgent need for action, that they planned what they would say prior to the confrontation, and that they were demanding while their partners withdrew from the interaction. Regardless of an individual’s argumentative role, the more times a serial argument had occurred, the more predictable or “scripted” the content of each episode was perceived to be. However, among resisters, the more times a

⁵⁹ See van Eemeren et al. (1993) for an elaboration of this idea.

serial argument had occurred, the less resolvable the argument was perceived to be and the more harmful it was seen to be to the relationship.

Pamela Benoit and William Benoit (1990) describe interpersonal arguments from the point of view of the participants in interpersonal argumentation. What do people mean when they say that they are having an argument? With whom are arguments transacted? How do persons get into arguments? How do they get out of arguments? The authors emphasize that in personal communication arguers must find ways of establishing cooperation, so that their relationships are not entirely chaotic.

Daniel Canary focuses on arguments between marriage partners. He wants to know how couples within marital dyads resolve disagreements. The marital dyad is one type of relational category within the broader classification of personal communities. Canary describes marital dyads according to goals, motives, topics, and power control. He also describes the arguers themselves and suggests how their personality traits, relationship histories, and the type of relationships provide clues about the type of argumentation that will take place between married couples.

One way to observe argument between couples is to utilize a system that directly assesses how individuals and couples develop their ideas. Canary developed a taxonomy based on empirical examinations, the Conversational Argument Coding Scheme (Canary et al. 1987, 1991). This taxonomy includes six major categories of interpersonal argument.

Starting points (1) are positions the arguer wants the other to accept in the interpersonal exchange. Starting points include statements of belief or opinion as well as statements that call for discussion or action. Starting points are supported with *developing points* (2). Developing points can consist of elaborations, which are statements that support other statements by providing evidence or clarifications or other types of sustaining elements. Showing agreement to someone else's idea or showing understanding (without agreement) indicates growing closer in terms of ideas. These messages are therefore called *convergence markers* (3). This category includes statements that indicate agreement and statements that indicate recognition or understanding of someone else's point. Their opposite is messages indicating nonacceptance of the other's views. These are called *prompters* (4) because further communication is needed if convergence is to be achieved. Among the prompters are the objection (denying the truth or validity of other statements) and the challenge (a message presenting a problem, question, or reservation that must be addressed to reach agreement). *Delimiters* (5) are messages that contextualize or limit the discussion topic. Among the delimiters is the "frame," a message that provides a context for or qualification of another message. Finally, there are behaviors that have no immediate argument function and are labeled *nonarguments* (6).

Canary's coding scheme can be used as an addition to conversation analysis. Coding the individual messages in transcriptions of argumentative discourse can be helpful in characterizing and explaining the course of argumentation. Canary and Sillars (1992) compare the arguments of satisfied and dissatisfied couples to see whether there is a link between interpersonal argument and marital

satisfaction. Satisfied and dissatisfied couples differ in their use of argument structures. Satisfied couples enact, for instance, a larger percentage of argument structures than dissatisfied couples do. Dissatisfied couples appear more likely to break off arguments or shift to other issues.

Harry Weger Jr. (2001, 2002, 2013) examines the merits of reconstructing problematic interpersonal conflict behavior as a violation of pragma-dialectical rules for critical discussion. Dialectical reconstruction of interpersonal conflict behavior sheds light on the ways in which fallacies influence not only the course of a critical discussion but also the state of the personal relationship and the perception of outcomes by arguers. Conflict sequences such as cross-complaining and demand/withdraw are shown to be problematic because they prevent parties from resolving their difference through rational dialogue.

Barbara O’Keefe and Pamela Benoit are among those who study how individuals develop argumentative competence, focusing on argumentation as a set of acquired skills.⁶⁰ If we know more about how and when these skills are normally acquired, we can design more effective pedagogy and training. O’Keefe and Benoit (1982) study the role of discourse in children’s disputes, especially in argumentative interaction. Opposition is a common feature of social interaction among children. Children do not need to learn to disagree: disagreements originate spontaneously and frequently in interactions among even the youngest children. O’Keefe and Benoit claim that children are competent arguers, since the basic skills that equip them to participate in conversation also equip them to conduct arguments.

According to O’Keefe and Benoit, “premature assumptions of developmental difference are quite dangerous, as the recent history of developmental psychology will attest” (1982, p. 154). They emphasize that a great deal of research has been done “to show that young children can in fact do perfectly well many things Piaget (and others) have claimed they are incompetent to do” (p. 154). O’Keefe and Benoit concluded from their study that “it is precisely in borderline cases that a given attribute of arguments is likely to be displayed most clearly.” “Attending solely to paradigm cases,” they say, “can blind the analyst to the operation of multiple attributes and processes” (p. 161). It appears that disputes may be conducted in a variety of modes, that verbal exchanges are one such mode, and that within the same dispute, different modes of dispute may be employed, concurrently or successively. Thus, in ordinary usage, argument is “an intrinsically fuzzy concept that can be appropriately applied to a wide range of activities” (p. 157). Where some researchers might be inclined to see fuzziness as a predicament to be solved by increasingly precise definitions and distinctions, O’Keefe and Benoit advocate seeing fuzziness as a fact to be explained.

Dale Hample (2005) is interested in the preconceptions language users have about what they are doing when arguing. He calls these preconceptions *argument frames*. Argument frames summarize some of people’s leading expectations about

⁶⁰ See, for example, Benoit (1981, 1983) and O’Keefe and Benoit (1982).

the activity of arguing. Hamble distinguishes three general categories of frames. One's primary frames are focused on oneself and one's life goals in the moment. A person might make an argument to avoid an errand or to encourage a loan and might notice only that sort of utilitarian purpose for arguing. A primary frame is defined as being in play when the self's desires are the foci. Hamble specifies four such frames: utility (using an argument to one's advantage), dominance (arguing to display power over the other), identity (arguing to display some feature of self), and play (arguing for entertainment).

The second group of frames involves whether and how one connects with the other arguer. In an interactive argument, another active person is present who brings another set of motives and plans to the episode. However, people do not always acknowledge the other person in what we might loosely call a "genuine way." Sometimes, the other might just as well be inanimate and is apparently seen only as a foil, a means or obstacle to achieving one's goals. So the first theoretical issue in this second kind of frame is whether or not the arguer even arrives at this stage. Thus, we examine blurring (speaking without planning) because blurts come simply out of cognition without alteration and perhaps without any adaptation to the other arguer's personal reality. Blurters never make use of the second sort of frame because they do not connect their own goals to those of others. Other arguers do. For people who do make a conscious or unconscious effort to conjoin their own impulses with other's needs and rights, a key question is whether the attempted connection is cooperative or competitive. Both require genuine notice of the other person. However, cooperation is regarded as displaying a more sophisticated understanding of what people do when they argue.

The degree to which one expects that arguments are "civil" is a measure that straddles the second and third set of frames. Seeing arguments as uncivil and brutish is partly connected to whether one frames arguing as permitting polite cooperative interaction. But civility is a key part of an advanced third frame as well. The third frame is the one that requires reflective consideration, a thoughtful theory of arguing. Arguers may intellectualize the activity of arguing. If they do so well, they achieve or approach the views about arguing that are held by argumentation professionals, particularly scholars. The conceptualization and operationalization of the third frame derive from the frank bias that scholars are correct about the nature of argument and that ordinary actors are quite often wrong (Hamble 2005; Hamble et al. 2009).⁶¹

Mark Aakhus (2003) investigates from a pragma-dialectical perspective how dispute mediators handle impasse in the renegotiation of divorce decrees by divorced couples. Based on an analysis of mediation transcripts, he identifies

⁶¹ A related trend in the empirical investigation of argumentation is studying argument in natural settings. Unlike the debate contest or the courtroom, these settings are usually informal and unstructured. School board meetings, labor-management negotiations, counseling sessions, public relations campaigns, and self-help support groups are some of the highly varied settings in which argumentation has been studied. Examples of such studies are Putnam, Wilson, Waltman and Turner (1986), Aakhus (2011), Aakhus and Lewiński (2011), and Hicks and Eckstein (2012).

three sources of impasse and three strategies for handling impasse. The problem lies not so much in the disputant's arguments but in the discussion procedures dispute mediators use to craft the disputant's argumentation into a tool to solve conflict. The moves of the mediators are understood as a practice of reconstructing argumentative discourse that is neither naïve nor critical but uses reconstruction as design.

Robert Craig and Karen Tracy study the use of argument concepts as meta-discursive framing devices. In Craig and Tracy (2009), they examine the discourse of oral arguments in three appellate court cases and testimony in legislative hearing, all on the question of same-sex marriage. Metalanguage is used with relatively high frequency and serves important pragmatic functions in the appellate courtroom. Speakers in the appellate courtroom typically frame their discourse in terms of presentation and discussion of arguments. As indicated by their use of logical connectives, speakers in a legislative hearing also frequently make arguments, but they typically frame their discourse in terms of self-expression (p. 49).⁶²

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⁶² In (2005), Craig and Tracy focus on the meta-discursive uses of “the issue” in two settings: college classroom discussions and public participation at school board meetings.

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9.1 Language-Oriented Approaches to Argumentation

Although this volume concentrates on studies of argumentation that are accessible in English, some attention is also paid to important contributions made in other languages that are only partly available in English. Among the new approaches to argumentation that have been developed in the last decades in languages other than English, there are some that are language-oriented and for the most part nonnormative in nature. These approaches, which have been primarily articulated in French and Italian, are surveyed in this chapter.

The sketch of the development of argumentation theory in France provided by Christian Plantin (2002, 2003) is a good starting point for giving a more detailed characterization of the various Francophone language-oriented approaches.

According to Plantin, from the late nineteenth century until the 1970s, in France the circumstances were not favorable for the study of argumentation and rhetoric:

At the turn of the century, rhetoric was associated with a group characterized by its anti-republicanism and excluded from the state education curriculum; [...] Logic had turned into a branch of mathematics; Argumentation studies were restricted to Neo-Thomist philosophy and religious education; [...] This situation was to remain unchanged until at least the 1970s. (2003, p. 177)

The revival of argumentation studies in Europe began in the 1950s when important works as Toulmin's *The Uses of Argument* (2003) and Perelman and Olbrechts-Tyteca's *The New Rhetoric* (1969) were published. Even though the new rhetoric appeared in French, it was not until the 1980s that the book became widely read in France.¹ Decisive for the start of the development of argumentation theory in France in the 1970s were the language-oriented approaches to argumentation of Oswald Ducrot and Jean-Blaise Grize. According to Plantin (2003), both approaches "could rightly be considered a theory of 'argumentation within language'" (p. 181), in the sense that they were theories of argumentation applying to language in general. For Grize, argumentation begins already with the sentence construction process. For Ducrot, linguistic *topoi* allowing the association of the predicates contained in the argument and the conclusion are the basis of the argument-conclusion link. It is due to the influence of Ducrot and to a lesser degree Grize that argumentation research in France has predominantly been of a linguistic nature:

It has to be stressed that argumentation reappeared in France not in the field of political discourse, as a critical practice, but in the field of structuralism, of linguistic logic, and of cognitivism. Argumentation is not a means for the rational regulation of conflicts of interest and differences of opinion; typically, argumentation is in the language, not in language use. (Plantin 2004b, p. 176, translated by the authors)

The influence of Grize's and Ducrot's ideas on argumentation studies in France has led to the general character of present-day argumentation research in France:

Argumentation being taken as a global concept, the question of the types of arguments, considered as basic for argumentation theory, is rarely discussed as such. There are not many French contributions on, for example, *ad hominem* or *ad misericordiam* or *petitio principii*. When these categories are mentioned, they are simply used as labels, as convenient tools in the descriptive task. On the other hand, the concepts of *topos*, *doxa* and *stereotype* are often considered as basic. (Plantin 2003, p. 185)

Generally, modern Francophone approaches to argumentation are descriptive in nature and combine insights from Ducrot in the way they have been elaborated in collaboration with Anscombe, Grize, classical rhetoric, and the new rhetoric with

¹ Although in the 1960s and 1970s *The New Rhetoric* was not yet really influential, according to Plantin (2003) it was a source of inspiration for the Neuchâtel circle around Grize (see Sect. 9.2).

modern linguistic insights from discourse analysis and conversation analysis. Prominent examples of such approaches are those of Christian Plantin, Ruth Amossy, and Marianne Doury, which are, in spite of certain differences, closely related to each other.

In the beginning of the twenty-first century, in the Italian-speaking part of Switzerland, another linguistic approach to argumentation has been developed. At the Faculty of Communication Sciences of the University of Lugano, a group of scholars led by Eddo Rigotti and Andrea Rocci have started a research program on verbal communication and argumentation theory. They concentrate on argumentative discourse as it manifests itself in institutional communicative domains such as mediation, financial negotiations, and exchanges in the media. Characteristic of their approach is the combination of insights from argumentation theories such as pragma-dialectics with semantic and pragmatic insights from linguistics and concepts from classical rhetoric and dialectic.

In this chapter, an overview will be given of the most prominent semantic and pragmatic approaches to argumentation from a linguistic perspective developed in the French- and Italian-speaking world. First, we give a survey of some basic insights from *natural logic*, an approach which is developed in Neuchâtel at the Neuchâtel Centre de Recherches Sémiologiques by Grize and his associates as an alternative to formal logic (Sect. 9.2). Then we discuss the linguistic approach to argumentation proposed and developed by French linguists Ducrot and Anscombre, which is known as the *theory of argumentation in the language* (Sect. 9.3). Next, we give a characterization of the modern Francophone approaches of Plantin, Doury, and Amossy which are all based on *discourse analysis* (Sect. 9.4). Finally, we sketch the outlines of the linguistic argumentative approach of the Luganese group around Rigotti and Rocci (Sect. 9.5).

9.2 Grize's Natural Logic

The theory of natural logic has been propounded in Switzerland, at the Centre de Recherches Sémiologiques of the University of Neuchâtel, Switzerland, as an alternative to the use of formal logic in the analysis of argumentation.² Since the late 1960s, this theory has been developed by Swiss logician Jean-Blaise Grize (1922–2013) and his colleagues Marie-Jeanne Borel, Denis Miéville, and Denis Apothéloz.³ Grize and the other members of his school studied what they prefer to call *natural logic*, as opposed to formal logic (and, at least terminologically, to

² See Grize (1982), Borel et al. (1983), Borel (1989), and Maier (1989).

³ Grize, born in 1922, was a collaborator of the epistemologist and psychologist Jean Piaget from 1958 until 1968; in 1960 he became professor of logic at the University of Neuchâtel, and until 1987 he was director of the Centre de Recherches Sémiologiques. Since 1965, Grize's work centered on the logic of ordinary argumentative discourse.

informal logic).⁴ The natural logicians are not interested in developing criteria for evaluating arguments: they want to describe the “logic” of ordinary argumentative discourse in a nonnormative, “naturalistic” way. Their approach is based on epistemological insights developed by Jean Piaget, on François Bresson’s approach to psychology, and on Antoine Culioli’s *Linguistics of the Utterance* (Culioli 1990, 1999); it also makes reference to the theoretical framework of Ducrot and Anscombe (see Sect. 9.3). The influence of Aristotle, and that of Perelman, can be discerned in the concern with speakers adapting the presentation of their arguments to the knowledge and values of the audience in order to meet conditions of plausibility and acceptability. More generally, their influence manifests itself in the natural logicians’ concentration on the *dispositio* of the argument.

Just like in the case of informal logic (Chap. 7, “Informal Logic”, this volume), the main motive for developing natural logic was dissatisfaction with formal logic.⁵ According to natural logicians, it is evident that the logic used in argumentation is not that of formal deduction alone. Also, the formal logical evaluation of argumentation requires a reconstruction which is often far removed from the argument as it was presented. A formal logical reconstruction of an argument involves a reduction of the argument to an abstract logical standard form, requiring more often than not transformations being carried out such as reordering elements in the text and adding implicit elements.

According to Grize (1982), there is no a priori justification (nor an a posteriori justification, for that matter) for reducing argumentation to mere deductive reasoning (p. 186). In his view, the way in which an argument is presented should not be seen as arbitrary. In considering this it is important to realize that its convincingness may, rather than on the abstract reasoning patterns underlying it, just as much, if not more, depend on its presentation. In order to do justice to the presentational aspects of argumentation, Grize proposes to study argumentation as a discursive phenomenon. In this endeavor, he opts for an approach that deviates in a number of ways from the approach chosen by formal logicians.⁶

⁴ According to Gomez Diaz (1991), the development of natural logic has proceeded through three stages. The first stage was aimed at developing a logic of thought which runs parallel to and is grounded in the psychology of intelligence (psychologic, 1958–1976). In the next stage, a sociological orientation is given to the theory (sociologic, 1978–1980). In the third stage, the affective aspects of argumentation are accounted for by moving into semiology (semiologic). Thus, natural logic incorporates the three components that are, according to Grize, common to all discourse: the cognitive component, the social component, and the affective component (Gomez Diaz 1991, pp. 123–124).

⁵ Natural logicians prefer the term *natural logic* to *informal logic* since they consider the latter term a *contradictio terminorum*. In their view, the term *informal logic* is misleading because it suggests that ordinary argumentative discourse is without form (Borel 1989, p. 38). By using the term *natural logic*, natural logicians want to emphasize that logic belongs to the domain of (naturalized) epistemology rather than normative science.

⁶ The description of the main differences between formal logic and natural logic serves at the same time as a (contrastive) definition of natural logic.

A first difference with formal logic is that natural logic purports to be dialogical, not monological. Unlike in formal logic, in natural logic the communicative situation in which argumentation is put forward is not disregarded: each argumentative discourse is seen as a proposal made by a speaker to a listener in a specific communicative situation.⁷ In order to get their proposals accepted by the listeners, speakers either have to present their premises as facts or, if they are not accepted as facts, provide argumentation in support of them. By contrast, in formal logic it is not the logician's task to establish the truth of the premises: they are regarded as hypothetical or axiomatic.

A second difference pertains to the semantics of argumentative discourse. It has to do with the notion of "discourse entities" or "discourse referents" (*les objets de discours*). In natural logic, a discourse entity is considered to be a linguistic sign which represents a cognitive representation in the language. Unlike the signs in formal systems, entities introduced in discourse always have a certain meaning, and this meaning is always to a certain extent undetermined (Grize 1986, pp. 49–50; Borel 1992). Associated with every discourse entity is a set of properties, of relations with other entities, and of actions which can be performed with the entities concerned. Of an entity like "key," for instance, it may be predicated that it "is made of iron" and "is light," but generally not that it "is gaseous" or "is even." The entity "key" can be related to other entities such as "lock" and "pocket," but not to an entity like "cloud." And an action one can perform with a "key" is "turn" it, but not "subtract" it. A speaker who constructs an argumentative text makes use of properties that, presumably, the listener already associates with the discourse entities that are introduced.⁸ However, not all properties of a discourse entity are predetermined. As the text proceeds, the entities are step by step given a more precise meaning, new connections are established with other entities, and the entities are also otherwise enriched and expanded.

An example of such a process of expansion can be found in the following text fragment:

- (1) The town was silent. Its streets deserted, not a single house lit-up.

In this example, the entity "the town" is further expanded by means of an operation of specification: the town, its streets, a single house (Grize 1986, p. 50).

A third difference between natural logic and formal logic is that natural logic takes into account that the aim of argumentation is not, as in formal proofs, to transfer the truth of the premises of the argument to the conclusion, but to gain the listener's approval or acceptance of the conclusion. What is at issue in the

⁷ Although the process of interpreting written texts is in some respects different, what is being said here about speakers and listeners applies, *mutatis mutandis*, equally to writers and readers.

⁸ Of course, when speaking metaphorically, all kinds of properties can be ascribed to discourse entities which they do not normally have.

discourse is plausibility, not truth. The argument should therefore be presented in such a way that it fits in with the way in which the world is represented by the listener.⁹

In view of these distinctive features, Borel (1989) thinks that natural logic takes an intermediate position between two extremes: logic and rhetoric (p. 36). Natural logic can be seen as a logical approach in that it concentrates on the *forms* of arguments; it can be seen as a rhetorical approach because of its emphasis on the situational (contextual and referential) aspects of argumentation. An argument is in natural logic studied in a context of situated argumentative discourse by taking account of the syntactic and semantic properties of the language in which it is formulated.

According to natural logicians, to produce an argumentative text that exhibits a *schematization* of a form adapted to the situation and fitting with their purposes, speakers perform specific kinds of operations. The objective of natural logic is to study the operations involved in the *construction* of such argumentative schematizations.

The schematization a speaker (A) proposes in an argumentative discourse to a listener (B) is a symbolic construction concerning a specific case presented interactively through a text in a given language in a given situation (Borel 1989, p. 38). The choice for a specific schematization depends on A's aims but also on the information available to A about B's knowledge, opinions, and preferences; A's assessment of the relation between A and B; and A's own knowledge and opinions about the theme of the discourse. In order to refer to the different types of *situational knowledge* the speaker brings to bear, Borel et al. (1983) make use of the term *representation*.

According to Borel et al. (1983), in order to account for the notion of schematization, a model of communication is required which is not simply a model of a transmittance of information.¹⁰ B can only arrive at a reconstruction of A's schematization by the performance of more or less similar operations as A performed in constructing the schematization. Since B has to play an active role in the reconstruction process, there is no guarantee that the schematization reconstructed by B is identical to the one proposed to him by A (Borel et al. 1983, pp. 99–100). If B's reconstruction is more or less identical with the construction intended by A, the natural logicians speak of a *resonance* between the listener's reconstruction and the speaker's construction. In reconstructing A's construction, B is helped by textual indications; traces of the activity of schematizing are always to be found in the text. It is due to the use of specific verbal means that certain *images* of the speaker, the theme, and the listener emerge in the schematization. These images are produced by the schematization. While the speaker's

⁹ A deduction or formal proof is by natural logicians seen as nothing more than a particular instance of this general concern to present an argument in such a way that it can gain the approval of the listener.

¹⁰ Grize (1996, pp. 60–68) discusses a number of postulates underlying the communication model of natural logic.

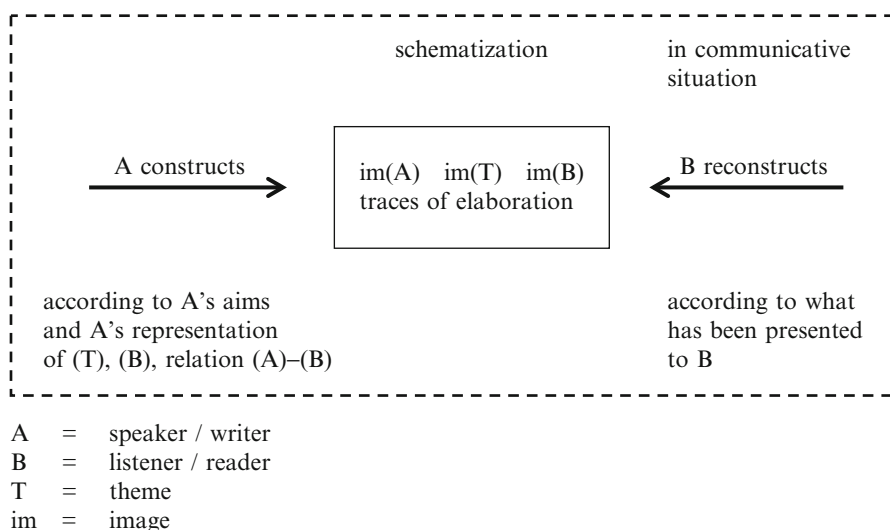


Fig. 9.1 Communication model for capturing the notion of schematization

representations intervene at the psychological or cognitive level, the *images* appear in the verbal material and need to be traced by the addressee.

The communication model required to capture the notion of schematization is presented in Fig. 9.1.

The term *schematization* is ambiguous. On the one hand, it refers to the *product* of the construction process (the schema); on the other hand, it refers to the *process* or activity of schematizing (Borel et al. 1983, p. 54). According to natural logicians, the ambiguity is not a disadvantage. On the contrary, it is precisely because of this ambiguity that it becomes possible to link the operations involved in the construction of a text to the organization of the text as a product.

Every text contains “traces” of the activity of schematizing (Borel et al. 1983, pp. 55–57). What the natural logicians mean by such traces can be illustrated by using the analysis they present of an example. For this purpose, we take their analysis of a fragment of a propaganda text aimed at convincing the reader of the fact that no violence was committed by the state in Argentina at the time when people were disappearing (example 2):

- (2) This is not all. In every country in the world each year thousands of People disappear: 10.0000 per year in France who do not inform their relatives at all. A similar situation exists in Argentina, where people have simply abandoned their homes, profiting from the chaos and confusion, in order to start a new life elsewhere, for strictly personal reasons. (translated from P.F. de Villemarest, *Les stratégies de la peur*)

At face value, this text provides the following information: people disappear here in France, in Argentina, and everywhere else and for the same reasons (Borel et al. 1983, p. 55). An analysis of the text schema as an activity of schematization, however, opens the possibility to point at other phenomena.

First, why does the writer introduce France while he could just as well have chosen a different country? From this choice, we may infer that the text is written for a reader who is French. The text therefore refers to a fact about disappearing that is known to a reader living in France. As soon as this has been acknowledged, the discourse can no longer be seen as just enumerating “true” and neutral facts. Knowing that it is a normal situation in France that people disappear, the reader may conclude that a similar situation might exist in other countries, such as Argentina. Thus, the text establishes a relation between different “facts” (concerning the situation in France and that in Argentina) which might produce either an inductive inference on the part of the reader (if this situation exists here, why not elsewhere) or an analogy (Argentina is similar to France).

Second, why does the writer put so much stress on a specific reason for disappearing (wanting to start a new life)? There are other reasons why people disappear, in France too, such as that they are the victim of a murder. Here, the values adhered to by the reader are supposed to guarantee the transition from the one fact to the other: irresponsible people who perturb their families you can find everywhere; this being the case in France, it will no doubt also be the case in Argentina.

The text as a whole is constructed in such a way as to prevent the reader from coming to an opinion that is different from the writer’s. The writer anticipates the reader’s reactions by evoking in the schematization the reader’s knowledge of the normal order of things and the values associated with it in the reader’s own society. At the same time, the supposedly neutral presentation of the facts is deliberately chosen to silence a reader who might have a different opinion on this issue. Although the form of the text is neutral, it is therefore clear that a polemic situation is presupposed.

A schema, or *schematization*, has a number of properties. It reports specific facts that are relevant to the speaker’s aim. It can be adapted to a specific listener. It has its own structure and should therefore be seen as a type of “micro-universe” or symbolic construction. It accentuates specific aspects, masking the unavoidable side effect of partiality inherent in selecting and constructing a schema. Nonetheless, traces of that which is left out by the speaker will always be present. Even a speaker who deliberately leaves certain elements implicit, or presents the information in a specific way to prevent the listener from coming up with specific questions or objections, cannot escape from showing at the same time to be doing so.

For a schematization to be successful, that is, to get the listener to adhere to the position advocated by the speaker, in the schematization the speaker must perform a specific operation: the operation of neutralizing the fact that the speaker is taking a certain *position*. The speaker can perform this operation by camouflaging the relative character of the schematization. The discourse should then be presented in such a way to the listener that it looks as if the information presented is objective and absolute. A schematization can be effective only if the speaker manages to incite the reader to take what Grize calls a *realistic* attitude towards what is being

proposed (Borel et al. 1983, p. 76).¹¹ This attitude is the counterpart of a “polemic” or “critical” attitude: it prevents the listener from becoming aware that the information that is presented as objective and absolute is, in fact, subjective and relative.

Whether or not the speaker succeeds in invoking a realistic attitude in the listener depends on the *discursive coherence* of the schematization. It is this coherence which enables the listener to reproduce (at least to some extent) the schematization the speaker has produced.¹² There are three conditions for discursive coherence.¹³

First, the discourse must be *receivable*. To retrieve the information from what is said, and to acknowledge the style in which it was formulated as appropriate for the occasion, the listener should be able to recognize that someone has said something in an identifiable form. Second, the discourse must be *plausible* (or should have verisimilitude¹⁴). The world that is presented in the discourse should be conceivable, its discourse entities should be identifiable, and the relations between these entities should correspond to the listener's idea of reality. Third, the discourse must be *acceptable*. Whereas the plausibility of the discourse refers to the domain of facts, the acceptability has to do with the values that are presented in the discourse. The listener should be able to identify himself with these values.

Grize (2004, p. 41) stresses that an addressee who has no objections left against a schematization that is being proposed to him, and thus accepts the schematization, may be considered to be *convinced*, but not necessarily *persuaded*. According to Grize, in order to achieve the latter, the argumentation should not just address the intellect but also the emotions. Playing on the addressee's emotions cannot just be done by communicating ideas. To this end, the discourse should be “illuminated”¹⁵:

¹¹ According to Borel et al. (1983, p. 75), Grize borrowed the concept of *realistic attitude* from Piaget (1923, p. 68), who considers this kind of attitude to be characteristic of the stage of “egocentrism” in the child's development of thought. In this non-critical or precritical stage, children do not differentiate between their own perspective of the world and that of other people and therefore take their own perspective as the only one and the true one. The concept of realistic attitude parallels Quine's concept of *proliferation of ontologies* and the Marxist concept of *reification*.

¹² A discourse is coherent if it invokes a suitable schema in the listener (Borel et al. 1983, pp. 76–77). This interpretation of coherence is influenced by Piaget's definition of the more general concept of *action scheme*. An action scheme is an abstract, non-perceptible form in which the generalizable properties of a particular action are assembled, which makes it possible to repeat an action or to apply it to new situations (Piaget and Beth 1961, p. 251).

¹³ Grize (2004, p. 40) makes a distinction between *non-coherent* and *incoherent* schematizations. In non-coherent schematizations, there is a gap in the representation that the addressee makes of the situation (i.e., some explanation is needed). A schematization is incoherent if there is a contradiction which needs to be resolved for the proposal to be acceptable to the audience.

¹⁴ Cf. Aristotle's concept of *eikos*.

¹⁵ Grize thinks that argumentation should have both a reasoning component and what he calls a *seductive* component, which makes use of “illuminations.” For this reason, Herman (2010, pp. 169–170) believes there is a close association between Grize's natural logic and rhetorical approaches.

It is also necessary to *make* the other *see*, which can be realized by the use of discourse figures. [...] The discourse entities must be illuminated, which means that some of their facets must be highlighted and others hidden and every illumination colours what it illuminates, because it makes use of cultural preconstructs that are never neutral. (Grize 2004, p. 42, translated by the authors)

In constructing a schematization, a speaker performs a number of *logico-discursive operations*. Natural logic distinguishes among three main types of operations: (1) operations of *determination*, (2) operations of *justification*, and (3) operations of *configuration* (Grize 1982, pp. 174–177; Borel 1989, pp. 39–41, 1991, pp. 46–49).

The operations of determination are general and elementary. They pertain to the qualification of the entities referred to in the discourse. Exemplifications of such operations of determination are the operations that introduce, or open up, (preexisting) classes of entities, and subsequently enrich these classes by adding new elements to them (an example is the operation of specification in example (1)). Other exemplifications are the operations of predication, which ascribe particular properties or relations to a discourse entity. There are also operations of restriction, such as the introduction of quantifiers, which mark off the boundaries of the speaker's responsibility for the predication, and operations of modality, which indicate the type of responsibility the speaker is willing to take for the predication.

The operations of justification embody all the speaker's discursive activities aimed at getting the listener to accept or believe what is proposed by the speaker's producing reasons to believe it. Among these operations are those that present the way in which objects are determined as irrefutable, those that enable the speaker to be relieved of the responsibility for his or her determinations by taking recourse to an authority, and those that support the one type of determination by another (any type of argument).

The operations of configuration are situated at the inter-propositional level. They concern discourse relations such as causal relations, which can be made explicit by means of operators such as "so," "since," and "because" (*donc, puisque, parce que*), and comparison relations which can be indicated by operators such as "like," "more than," "less than" (*comme, plus que, moins que*).¹⁶

As becomes clear from their description of the various operations involved in constructing a schematization of argumentative discourse, the natural logicians' approach to argumentation can be characterized as *epistemological*. A schematization aims at achieving some form of modification of the listener's state of knowledge. Such a modification can only come about if the speaker is able to establish a relation between that which is known and accepted by the listener and that which is new or not yet accepted by the listener.

A speaker may want to modify a listener's state of knowledge for didactic reasons but also for polemic reasons. In the former case, an explanation by the speaker is required; in the latter case, argumentation. An operation of analogy, for instance, as can be seen in example (2), can establish a correspondence between entities from two

¹⁶For examples of the operations of configuration, see Grize (1996, pp. 100–104). For an application of the logico-discursive operations to reasoning by analogy and reasoning by examples, see Denis Miéville in Borel et al. (1983, Vol. III).

different domains, thus authorizing a transfer of properties from the one entity to the other. The result of this transference of properties can be a modification of the listener's knowledge concerning a particular concept or a change in his or her opinions.

Natural logicians opt for a descriptive approach of argumentative discourse. They are not interested in developing criteria for distinguishing between "good" and "bad" arguments. Although their aim is to expose the "logic" of argumentative texts without assuming any a priori normative concepts, such as "truth" and "validity," Grize and his colleagues are aware of the fact that some theoretical framework is required to identify the operations involved in the construction of argumentative texts (Borel et al. 1983, p. 220). Not only are the operations as such not directly observable, but to observe anything at all, some preliminary theoretical notions are indispensable. The concepts of "schematization" and "logico-discursive operation" are intended to serve this purpose.

Until recently, natural logicians restricted themselves to the analysis of non-dialogical situations. They tend to concentrate on investigating the way in which an argumentative schematization is built up by a speaker in a monologue, taking situational aspects into account in their analysis, but not in an explicit dialogue. An exception in later studies is Frédérique Sitri (2003), who proposes analytical tools to grasp linguistically the processes of construction of Grize's *objet du discours* (discourse entity) in face to face argumentative discussions. Another exception is Milton Campos (2010), who has applied natural logic to the communicative interaction in hypermedia and multimedial systems. In Canada, at the University of Montréal, Campos aims together with Cristina Grabovschi to develop natural logic in the context of communication research. In Bergamo, Italy, Emilio Gattico, too, is engaged in the further development of natural logic, in particular by establishing its relationship with genetic psychology (Gattico 2009).

9.3 Ducrot and Anscombe's Semantic Approach

Since the early 1970s, Oswald Ducrot and Jean-Claude Anscombe have been developing a linguistic approach to argumentative discourse.¹⁷ Characteristic of their position is that they regard *argumentativity* as a general feature of all language use, whereas in most other approaches, it is seen as a distinctive feature of a specific form, or mode, of discourse.¹⁸ A further notable characteristic of Ducrot and Anscombe's theory is that it is exclusively descriptive. Their objective is to account for the meaning of sentences in argumentative terms.

¹⁷ Ducrot was a professor and research fellow at the CNRS (*National Centre of Scientific Research*). He is currently a professor (*directeur d'études*) at the Ecole des Hautes Etudes en Sciences Sociales (EHESS) in Paris. Anscombe is director of research at the CNRS, Paris.

¹⁸ According to Meyer (1986b), rather than to show simply that language is used to argue and to convince, Ducrot and Anscombe's aim is "to demonstrate how natural language indicates a conclusion; suggests, implies, promotes or presupposes it without stating it explicitly in words" (p. 95).

Their “argumentative” account of meaning is opposed to referential, truth-conditional theories of meaning.¹⁹ Ducrot and Anscombe’s approach has been highly influential in the French-speaking world²⁰; only in the last 20 years has it become somewhat better known among other argumentation theorists.²¹

As Ducrot and Anscombe have shown, the presence of certain words and expressions can provide the sentences in which they occur with an orientation that is intrinsically argumentative.²² This orientation predetermines that these sentences serve in support of particular types of conclusion rather than others.²³ However, the introduction of the concept of “ideal follow-up” (*conséquence idéale*) by Anscombe and Ducrot (1983, p. 63) makes clear that, in their view, the orientation towards particular types of conclusion does not completely determine which conclusions are eventually defended in argumentation. Language opens the possibility for certain ways of talking, but the people that do the talking decide how they are going to make use of these options. In addition to the linguistic component, Ducrot (1980) therefore also distinguishes a rhetorical component in the theory he envisages but leaves it rather sketchy.²⁴

9.3.1 Radical Argumentativism

The main outlines of Ducrot and Anscombe’s approach are sketched in Ducrot’s *Les échelles argumentatives* (1980), *Le Dire et le Dit* (1984), and *L’argumentation dans la langue*, coauthored by Anscombe and Ducrot (1983). Ducrot and Anscombe are calling their approach *radical argumentativism* because it is their view that every form of language use has an argumentative aspect. They have reached this radical position regarding the argumentative function of language in

¹⁹ Iten (2000) provides a detailed description and criticism of Ducrot and Anscombe’s semantic approach to argumentation.

²⁰ Their work is also well known in Spain, Portugal, and some Latin American countries (see Sects. 12.13 and 12.14). A real protagonist is Žagar (1995, 1996).

²¹ Cf. Lundquist (1987), Nølke (1992), van Eemeren and Grootendorst (1994), Verbiest (1994), Snoeck Henkemans (1995a, b), Žagar (1995), and Atayan (2006).

²² The role in interpretation processes of words and expressions as connectives (“but,” “and,” etc.) and operators (“almost,” “a little,” etc.) is investigated empirically by Bassano (1991) and Bassano and Champaud (1987a, b, c).

²³ Grize (1996, pp. 23–24) contrasts his own approach with that of Ducrot and Anscombe by indicating that, even if argumentative discourse makes use of orientations that are predetermined by language mechanisms, this is not the whole story: language provides the sociopsychological representations of those who make use of it.

²⁴ Ducrot (2004, pp. 17–19) makes a further distinction between *linguistic argumentation*, which is the type of argumentation that he is interested in, and *rhetorical argumentation*, the verbal activity aimed at making someone believe something. In his view, there is no direct connection between the two types of argumentation.

stages. Initially, they just concentrated on describing linguistic indicators of argumentative relations in natural discourse.²⁵

In their early work, Ducrot and Anscombe examined verbal *connectives* such as “therefore” (*donc*), “even” (*même*), “consequently” (*par conséquent*), and “for” (*car*). Later on, they broadened their analysis to include other types of connectives, such as “but” (*mais*) and “and” (*et*). Traditionally, these particles have been analyzed as introducing relations between states of affair, but, according to Ducrot and Anscombe, they have a similar argumentative value as the generally recognized indicators of argumentative relations.

Anscombe and Ducrot consider as argumentative all utterances that lead the listener or reader, often implicitly, to a certain conclusion. Starting from this view, they conclude that the use of argumentation is not limited to a particular type of intellectual activity. Instead, they regard it as a permanent feature of the use of language. A case in point are such connectives as “and” and “but”: rather than being restricted to argumentative contexts, they are used in all types of discourse. All the same, the use of these connectives is in a specific way argumentatively constrained. The connective “and,” for instance, cannot be used to connect two premises with inconsistent orientations. Under normal circumstances, an utterance like (3) sounds odd, whereas “but” would fit in perfectly:

(3) Go see that movie: it is poorly directed and very well acted.

In a further stage of the development of their approach, Anscombe and Ducrot extend their analysis to other lexical items: *operators* such as “little,” “a little,” “almost,” “barely,” and “hardly.” Their fundamental idea is that through the use of such operators, argumentative values enter into the semantic structure of the sentence. These operators provide sentences with an orientation towards a certain type of conclusion that cannot be deduced merely from the informative content of the sentences concerned.

This point is illustrated by examples (4), (5), and (6):

- (4) (a) There were twenty people.
 (b) So the party was a success.
 (b') So the party was a failure.
- (5) (a) There were *almost* twenty people.
 (b) So the party was a success.
- (6) (a) There were *barely* twenty people.
 (b) So the party was a success.

In example (4), no argumentative operator is employed. The statement “There were twenty people” (4a) may just as well be used to argue for the success of the party (4b) as for its failure (4b'). It depends on the context and the norms for a party

²⁵ In “Argumentativity and informativity” Anscombe and Ducrot (1989) describe the evolution in their work.

being successful whether there being 20 people can be considered as an argument for the success of the party or for its failure. As soon as an argumentative operator is introduced, this situation changes. In (5), the statement that there were “almost” 20 people (5a) can be interpreted as an argument for the success of the party; in (6), however, the statement that there were “barely” 20 people (6a) cannot be considered to support this positive conclusion (unless the speaker is being ironical, but then the speaker’s intended conclusion is just the opposite of the literal conclusion).

The presence of operators such as “almost” and “barely” has an influence upon the argumentative orientation of the utterance in which they occur that is absent in “neutral” utterances without them. Their use orients the listener or reader towards a certain type of conclusion. In Ducrot’s terms, “barely” orients towards minus, “almost” towards plus. This orientation cannot be deduced merely from the quantitative information provided by these operators.

Since “almost twenty” means less than 20, whereas “barely twenty” means 20 or more, the argument that there were “almost” 20 people would, viewed merely from a quantitative point of view, provide weaker support for the conclusion that the party was a success than the argument that there were “barely” 20 people. If the number of people present at the party were decisive for its success, then using “barely” in the argument supporting the conclusion would have led to a stronger argument than using “almost”: more than “almost,” “barely” directs the listener or reader to this desired quality of quantity. In fact, however, just the opposite happens to be the effect of these operators. Evidently, the quantitative information provided by these operators does not determine the way in which they are used argumentatively. There is some extra meaning attached to these operators which transcends their purely informative meaning in the quantitative sense. A positive orientation appears to be associated with the use of “almost” and a negative orientation with the use of “barely.” This orientation is what Ducrot and Anscombe call *argumentative*.

In the next stage of the development of their theory, Anscombe and Ducrot take up a more radical stance. They no longer believe that the aforementioned operators introduce argumentative values into otherwise purely informative, or neutral, sentences. In their view, argumentativity is already inherent in sentences without operators.²⁶

At the sentence level, linguistic predicates such as “being expensive” in “This restaurant is expensive,” or “to work” in “John worked more than Peter,” always provide an argumentative orientation. These predicates are associated with certain sets of argumentative principles, comparable to the Aristotelian *topoi*. According to Anscombe and Ducrot (1989), describing an object as “expensive” rather than “cheap,” instead of merely providing information on its price, involves a choice for applying *topoi* regarding the value of expensiveness as compared to cheapness

²⁶ Verhagen (2007) gives a cognitive-linguistic elaboration of Ducrot and Anscombe’s theory. He argues that the meaning of grammatical constructions often has more to do with the human cognitive capacity for taking other people’s points of view than with describing the world.

(p. 80). Calling something expensive may, for instance, invoke the *topos* "The less expensive a thing is, the better deal acquiring it is," or its converse, "The more expensive a thing is, the less a good deal acquiring it is." A *topos* always entails a correspondence between two dimensions of gradation of a non-numerical kind.

In a particular speech community *topoi* authorize the drawing of certain conclusions. Thus, in a context where the *topoi* "The more expensive a restaurant is, the less recommendable it is to go there" and "The less expensive a restaurant is, the more recommendable it is to go there" apply, calling a restaurant expensive will amount to advancing an argument for not going there, whereas calling it cheap may be considered as an argument for the opposite conclusion.

Conclusions that can be drawn on the authority of certain *topoi* may be left unstated. If conclusions have been made explicit in the discourse, it depends on the *topoi* that are invoked whether or not the specific discursive sequences containing that conclusion will be well formed. Under normal circumstances, the following sequence of statements sounds rather strange:

(7)* This restaurant is expensive: you should go there.

This sequence might be well formed, however, in a context where *topoi* apply such as "The more expensive the restaurant is, the better the quality of the food" or "The more expensive the restaurant is, the more impressive it is." The latter *topos* may, for instance, apply in a context where it is important to make a good impression, and the addressee is supposed to be impressed by the fact that the recommended restaurant is an expensive one.

As we have mentioned, in the stage of radical argumentativism, argumentativity is not considered to be introduced only by the argumentative operators. In Anscombe and Ducrot's view, *topoi* are immanent in the meaning of the predicates, and through *topoi* argumentative values already enter the sentences as they "initially" are. Nevertheless, argumentative operators do still play a role, albeit the more restricted one of specifying in what way the *topoi* are to be applied.

First, argumentative operators can provide information as to whether the "direct" *topos*, which can be schematized as "The more x, the more y," is to be invoked or the "converse" *topos*, which can be schematized as "The less x, the less y." How this may work can be shown with the help of sentences (8a) and (8b):

(8a) Peter worked a little.

(8b) Peter worked little

When the sentences (8a) and (8b) are interpreted, it has to be established first which *topos* should be selected. The set of *topoi* associated with the use of the predicate "to work" includes *topoi* such as "The more someone has worked, the more praise he deserves" and "The more someone has worked, the more tired he is." Assuming that the first *topos*, "the more someone has worked, the more praise he deserves," does apply, it then needs to be established whether the direct *topos* or the converse *topos* should be selected. This is where the argumentative operators come into play. In (8a), "a little" instructs us to select the direct *topos*: that Peter worked a little can be seen as an argument for the conclusion that he deserves to be praised. In

(8b), “little” points to the converse *topos*: that Peter worked little may be regarded as a reason for not praising him.²⁷

Second, argumentative operators can provide information regarding the “argumentative force” of an utterance. In (8a), “a little” locates Peter’s work at the bottom of the scale (or gradation) of work. The conclusions drawn from (8a) will have to be related to an equally low position on the same scale. Under normal circumstances, (8a) would be followed by a conclusion like “We must give him a little something,” not by “He deserves a big reward.” Things change if the speaker provides additional arguments such as “The weather is unbearably hot” or “He has recently undergone a severe operation.” Through such additions the speaker increases the argumentative force of the utterance, thus authorizing a “stronger” conclusion.

9.3.2 Polyphony in Argumentative Discourse

Crucial to Anscombe and Ducrot’s analyses of different types of sentence connectives is the concept of *polyphony*, or “many-voicedness.”²⁸ According to the polyphonic theory, any piece of discourse, even if it consists of just one sentence, can contain a dialogue, whether explicit or implicit. As a consequence, in the utterance of a sentence more than one standpoint can be expressed at the same time, and no single speaker can, at the same time, be held responsible for all the (sometimes contradictory) viewpoints that are being expressed.

This can be illustrated with the help of an example of a sentence with a negation:

(9) This wall is not white.

According to Anscombe and Ducrot, this sentence entails a dialogue with a (silent) “voice” that maintains, or at least believes, (10):

(10) This wall is white.

This second “voice” is revealed by analyzing (9) as structurally containing two (incompatible) viewpoints:

- (a) This wall is white.
- (b) Viewpoint (a) is incorrect.

In support of this analysis of sentences containing a (polemic) negation, Ducrot (1984) refers to the fact that a negative statement can be followed by the expression “on the contrary,” as in “He is not nice, on the contrary, he is detestable” (1984, pp. 216–217). The expression “on the contrary” must refer to the positive

²⁷ For a more detailed analysis of the difference between examples (6a) and (6b), see Anscombe and Ducrot (1989, pp. 90–91).

²⁸ Anscombe and Ducrot’s concept of *polyphony* stems from Bakhtin, who introduced it in literary theory. A detailed explanation of the polyphonic theory is given in Ducrot (1984, Chap. 8).

statement “He is nice” and not to the negative statement “He is not nice.” Both the positive viewpoint (“He is nice”) and its rejection must therefore be present in the negative sentence.

In order to account for the possibility that in one and the same utterance different voices are speaking, Anscombe and Ducrot make a threefold distinction. First, there is a “speaker” or “writer” (*sujet parlant*): the actual producer of the utterance, the physical person who is doing the speaking or writing. Second, there is a “locutor” (*locuteur*): the source that is responsible for the words that are spoken in (a certain part of) an utterance, often referred to in the utterance by the personal pronoun “I” (or a similar linguistic marker).²⁹ Third, there is the “enunciator” (*énonciateur*): the character that presents a perspective on the points of view or attitudes referred to by a locutor, without the locutor being accountable for these views or attitudes.³⁰

Through the enunciator, the speaker or writer can introduce a certain view on what is being said by a locutor, whether this locutor is someone else or the current speaker or writer. This view may not be directly attributed to the locutor, because it originates from an independent character, the enunciator. According to Ducrot (1984), the distinction between the speaker or writer, the locutor and the enunciator resembles the distinction made in literary theory between the author of a novel, the narrator, and the character whose point of view or perspective determines the way in which the narrated events are presented (pp. 206–208).

Anscombe and Ducrot's analysis of the connective “but” provides a good example of the way in which they use the notion of polyphony in their linguistic descriptions. In these descriptions, they combine the notion of polyphony with the concept of *topos*.

In propositional logic, “but” means precisely the same as “and.” It is, of course, recognized by logicians that an additional feature of “but” is that it implies a contrast or opposition between the two conjuncts it connects, but this observation has no influence on the truth conditions of the sentence. From a purely logical point of view, the meaning of the sentence “P, *but* Q” is exhaustively analyzed by the equivalence in (11):

- (11) The sentence “P *but* Q” is true if and only if “P” is true and “Q” is true.

²⁹ The difference between the “speaker” and the “locutor” can be illustrated with the help of an example. Mary says: “Peter said I don’t know what to do.” In this example, the speaker, Mary, and the locutor referred to by “I,” Peter, are different people.

³⁰ The role of the enunciator, too, can be illustrated with the help of an example. Suppose a speaker narrating someone else’s experiences at an airport waiting impatiently for the arrival of his girlfriend: “First a man in a black hat comes out, then a group of teenagers, followed by two rather fat ladies, and then – at last – Joan appears.” In this example, the words “at last” cannot be attributed to the (uninvolved) reporting locutor, but they represent the perspective of an enunciator who expresses the waiting person’s relief at finally seeing his girlfriend.

In Ducrot and Anscombe's (non-truth functional) analysis of "but," an attempt is made to capture the nature of the opposition implied by "but" more precisely than it is captured in the logical analysis. In a sentence like (12), it is clear that the opposition cannot simply be that between (P) and (Q):

(12) This restaurant is expensive (P), but good (Q).

The opposition cannot simply be that there is a contradiction between the properties "being expensive" and "being good" when applied to a restaurant, since there is no contradiction. According to Anscombe and Ducrot's view, in (12) "but" indicates an opposition between two opposite conclusions that are authorized by the following two *topoi*: "The more expensive a restaurant is, the less advisable it is to go there" and "The better a restaurant is, the more advisable it is to go there."³¹ In (12), "but" refers to an opposition between two conclusions:

C1 "It is not advisable to go there" (a conclusion drawn from (P)).

C2 "It is advisable to go there" (a conclusion drawn from (Q)).

According to this analysis, P and Q are arguments for two opposite conclusions. However, "but" not only indicates a contrast, so the analysis is not yet complete. A further important characteristic of the construction "P, *but* Q" is that the conclusion *that can be drawn from Q* is the one the arguer wants to endorse. Thus, the presence of the word "but" ensures that the conclusion based on the first part of the sentence is the opposite of the conclusion based on the second part, and it also ensures that the latter is considered stronger. The argument Q carries more weight for the arguer than the argument P. In our example (12), the arguer may be considered to defend the conclusion "It is advisable to go there," which is supported by Q.

In polyphonic terms, the analysis of a sentence like (12) runs as follows. A speaker who says "P, *but* Q" stages four enunciators (Ducrot 1990, pp. 68–69):

- An enunciator E1, who adopts the point of view expressed in P ("This restaurant is expensive")
- An enunciator E2, who adopts the point of view expressed in Q ("This restaurant is good")
- An enunciator E3, who argues from P to a conclusion C ("It is not advisable to go there")
- An enunciator E4, who argues from Q to a conclusion not-C ("It is advisable to go there").

The locutor agrees with E1 and E2, dissociates himself (or herself) from E3, and associates himself (or herself) with E4.

This analysis makes it also possible to explain the difference in meaning between sentences (13) and (14):

(13) This restaurant is expensive, but good.

(14) This restaurant is good, but expensive.

³¹ In an ordinary (unmarked) context, these two *topoi* seem the most suitable. Of course, in some other context other *topoi* might be relevant.

In the case of (13), the sentence can be followed by “You should go there.” In the case of (14), under normal circumstances this addition does not result in a well-formed discursive sequence. The reason is that (14) would normally be seen as support for the opposite conclusion: “You should not go there.”

9.3.3 The Theory of Semantic Blocks

In the last 15 years, a new development has taken place within the theory of argumentation in the language. Together with Ducrot, Marion Carel has developed a more radical version of Anscombe and Ducrot's theory of argumentation: *La Théorie des Blocs Sémantiques* (the theory of semantic blocks) (Carel 1995, 2001, 2011; Carel and Ducrot 1999; Ducrot 2001).³² According to this theory, the meaning of a linguistic entity is determined by the collection of discourses that are linguistically associated with this entity. In this perspective, the term *argumentation* does not refer to a cognitive or psychological activity (reasoning, attempting to persuade, etc.) but to a grammatical connection between two propositions by means of a connective. The notion of “semantic block” has come in the place of the original concept of *topos*. Within the theory of semantic blocks, argumentation is seen as a *sequence of discourse segments* that are connected by a connective: A THEREFORE C or A NEVERTHELESS C. THEREFORE and NEVERTHELESS are to be seen as abstract or prototypical connectives that can have various concrete instantiations. The two abstract connectives represent two of the forms that the connection (CONN) between two segments in an argumentative sequence can take. The value of THEREFORE is called *normative*, that of NEVERTHELESS *transgressive*. The normative and the transgressive forms of one and the same argumentative sequence are considered to belong to the same *semantic block*: both give a particular semantic point of view of that sequence (Carel 1995, p. 11).

Argumentative sequences of discourse are called *semantic blocks* because the elements involved are inseparable, the conclusion being a mere rephrasing of the meaning contained by the antecedent. The argument only has meaning via the conclusion that follows it, just as the meaning of the conclusion depends on the argument that precedes it (Ducrot 2001, p. 22n1). This implies that the meaning of a discourse fragment cannot be described without reference to the sequential structure of which it is part (Carel 1995, p.168). A description of the meaning of the word “prudent” (i.e., the whole set of semantic blocks the word enters), for instance, should include both the sequence in (15) and that in (16):

(15) Peter is prudent, so he has not had an accident

(16) Peter is prudent, so Mary is bored by him

³² In Carel and Ducrot (2009), a revision is proposed of the original polyphonic theory as presented by Ducrot (1984) in *Le dire et le dit*.

Carel (1995, p. 187) and Ducrot (2004, p. 24) do not analyze a discourse sequence like (15) as a form of reasoning or as a justification of one fact by another. They regard the connected propositions as a description of a single situation, that of Peter, and this description consists in applying the rule *prudence causes one not to have accidents*. According to Carel (1995, p. 187), such descriptions are the expression of a single idea or point of view, underlying both the words “prudent” and “not having accidents,” which is selected by combining these words in a single sequence.

According to Puig (2012, p. 129), in Ducrot and Carel’s approach, describing the meaning of a word, a phrase, or an utterance amounts to determining the argumentative linkages that are allowed by these entities. In her view, the conception of the meaning of utterances adhered to in the theory of semantic blocks has the following important theoretical implications:

In discourse, the stated arguments do not accomplish, as they do with reasoning, the function of justifying the corresponding conclusions. The argumentative linkages make up semantic blocks [...] the function [of which] is to represent situations, to construct a schematization, to propose a certain vision of things. (2012, p. 129)

It is clear from the literature that the analyses given of connectives and other expressions with the help of the theoretical instruments of the theory of argumentation in the language have been a source of inspiration to researchers in the field of argumentation. Ducrot and Anscombe (and later Carel) may be primarily interested in using argumentative notions to explain what words and sentences mean,³³ but their linguistic approach provides argumentation theorists with valuable insights, in particular regarding the argumentative function of various operators and connectives. Starting from these insights, a methodical exploration can be undertaken of the verbal clues for identifying standpoints and arguments and for analyzing the structural aspects of complex argumentation. Snoeck Henkemans (1995a), for example, gives an account of the way in which connectives such as “even” and “anyway” may serve as indicators of “coordinative” and “multiple” argumentation structures that is partly based on the analyses of Anscombe and Ducrot.

Ducrot and Anscombe’s polyphonic and topical analyses of connective words such as “but” and concessive words such as “although” have established the ground for more detailed analyses of counterarguments, refutations, and concessions. Moeschler and de Spengler (1982), but also Apothélos et al. (1991) and Quiroz et al. (1992), are among those who have carried out such analyses starting from insights gained from the works of Ducrot and Anscombe. More recently, Rocci (2009) has applied the notion of *polyphony* to an analysis of the strategic maneuvering in advertisements.

³³ See Ducrot et al. (1980) and Anscombe and Ducrot (1983) for detailed analyses of expressions such as “even” (*même*), “anyway” (*d’ailleurs*), “at least” (*au moins*), and “but” (*mais*).

9.4 Francophone Discourse Analytic Approaches

Three of the most well-known Francophone argumentation scholars working in the descriptive traditions of discourse analysis are Plantin and Doury in France and Amossy in Israel. Apart from being strongly influenced by conversation analysis and discourse analysis, their work has been inspired by Ducrot and Anscombe's theory of argumentation in the language and by Perelman's new rhetoric. In this section, we discuss the main contribution to argumentation theory of these three authors.

9.4.1 Christian Plantin

Christian Plantin is a French linguist and argumentation scholar who was a student of Ducrot.³⁴ His approach to argumentation, which was originally inspired by Ducrot's ideas on argumentation in the language, shifted in the 1980s gradually to the study of argumentation in discourse. Other major influences on Plantin's approach have been the works of Perelman and Hamblin. In 1990, Plantin published a collection of essays on argumentation, in which he discussed various present-day approaches to argumentation and their historical backgrounds from a rhetorical and linguistic perspective. After he had as a researcher at the University of Lyon 2 and as director of the Laboratoire ICAR (Interactions, Corpus, Apprentissages, Représentations) stimulated the creation of a corpus of spoken language in interaction,³⁵ Plantin's interest in argumentation became in the first place oriented towards dialogue and interaction. This has culminated in the creation of a dialogical model of argumentation (2005, Chap. 4).

In Plantin's dialogical model of argumentation, elements of classical rhetoric (Hermagoras, *Rhetorica ad Herennium*) are combined with empirical insights from interaction studies. The model can be characterized as a question-answers model, since a central notion in the model is the *argumentative question*, a question allowing for different, incompatible answers. According to the dialogical model, the typical *argumentative situation* is characterized by a confrontation of (two or more) incompatible points of view put forward in response to the same argumentative question. The argumentative activity starts with a speaker doubting a point of view put forward by an interlocutor. This situation obliges not only the interlocutor to defend their point of view but also the opposing party to justify their doubts. The latter can do so by giving arguments for a different point of view or by refuting the reasons given in support of the original point of view advanced by the other party. It

³⁴ Plantin is director of research at the CNRS (*National Centre of Scientific Research*) at the University Lyon 2 in France. His research is situated in the UMR ICAR (Interactions, Corpus, Apprentissages, Représentations).

³⁵ The name of the corpus of spoken language is CLAPI: Corpus de langue parlée en interaction.

is by this confrontation of discourse and counter-discourse that an argumentative question is created (Plantin 2005, Chap. 4, 2010).

The dialogical model applies not only to argumentation in dialogues but also to argumentation in situations with only one speaker or writer. This extension of the dialogical concept of argumentation to monological discourse is rendered possible by making use of Ducrot's concept of "polyphony" (propositions are attributed to a "voice" with respect to which the arguer takes a position) and the notion of "intertextuality" (in every argument inevitably references are made to the collection of *topoi* – arguments and counterarguments – that go together with an argumentative question). As a consequence of these theoretical starting points, every argumentative utterance must be analyzed as consisting of two antagonistic discourses that take place either in direct confrontation with each other or at a distance from each other. The monologue is seen as a special case, in which the counter-discourse is internalized.

Plantin combines his dialogical approach to argumentation with insights from Ducrot's polyphonic analysis of connectives such as "but" (Plantin 2010). Within the framework of dialogical argumentation, it is the argumentative question which structures the context in which "but" must be interpreted and thus determines the interpretation of the conclusions that can be drawn from an utterance such as

(17) This restaurant is good, but expensive.

This utterance could, for instance, be an answer to a question such as (18):

(18) Shall we try this restaurant?

or to a different question, such as (19):

(19) Which restaurant would be the best investment for us?

Depending on the argumentative question which is chosen, the interpretation will be different. As an answer to question (18), the utterance could be giving support for a conclusion such as "Let us not eat there." If (17) is uttered in response to question (19), the conclusion transmitted by means of (17) could be "Let us not buy it." It is thus the argumentative question that determines the content of the conclusion that can be drawn from the utterance connected by "but."

Unlike in Anscombe and Ducrot's radical argumentativism, the argumentative function of connectives and other types of indicators is seen by Plantin (2010) as situated at the level of language *use* and is thus viewed as contextual. If the context is argumentative, potential argumentative markers can be an indication of an argumentative function, but even then they might still mark other functions. Unlike Ducrot, Plantin therefore thinks that "but" does not necessarily have an argumentative function. "But" functions as a marker of opposite orientations, but these orientations may be narrative, argumentative, or descriptive in nature (Plantin 2010).

With respect to the evaluation of argumentation, Plantin has written a number of publications in which he provides an overview of classical and modern approaches to

fallacies (Plantin 1995, 2009a) and explains what role criticism of argumentative language use plays in his dialogical model of argumentation. According to Plantin (1995, pp. 255–257), in a dialogical context, a fallacy criticism should be seen as a move in the debate itself. This type of evaluation can thus be seen as an argument that functions in accordance with the same principles as any other argument. For this reason, Plantin argues, one could call a fallacy verdict an *argumentum ad fallaciam*.

An important part of Plantin's work has been devoted to the role of emotions in argumentative discourse. According to Plantin (1997, 2004a, 2011), emotion has a place within argumentation. It is, for instance, possible to have a dispute about whether or not a certain emotion is legitimate (2011, p. 188), as is shown by B's reaction in the dialogue (20):

- (20) A: I am not afraid.
B: You should be.

It is possible to justify an emotion by referring to a state of affairs ("The new town hall is the most beautiful one of the region; I am very proud of it!") or to justify an action by using an emotion as an argument ("I am outraged; therefore I am going to demonstrate!") (Plantin 1997, p. 82).

Another type of utterances is those that do not contain any emotional terms or expressions themselves, but may be used as an appeal to pity. An example Plantin discusses is the following: "Children are dying of hunger and thirst in the desert" (1997, pp. 86–87). According to Plantin, this utterance is linguistically and socially associated with a set of *topoi* that justify the emotion of pity: (1) *Who* is involved? The referent of the utterance is children. That is a category that in itself can create an emotional orientation; (2) *What* is going on? The children are dying. The death of innocents is an ancient theme that raises sentiments of injustice and pity; (3) *Where* is the event taking place? The children are dying in the desert. The desert is associated with death, and thus, the sentiment of fear comes into play; (4) *Why* are the children dying? Hunger and thirst are a cause that can be remedied; therefore, the utterance makes an appeal to charity and to the obligation to help others in need (Plantin 1997, p. 87). By applying such a system of *topoi*, it thus becomes possible to give a more precise analysis of the construction of emotions.³⁶

Characteristic of Plantin's approach is that emotions are not viewed as effects of certain causes, but as meaningful signs that are intentionally produced by language users to achieve certain aims with other language users (Plantin 2011, p. 186).³⁷ Being emotional or attempting to move someone else are in this

³⁶ Plantin's topical system of emotions is based on insights from cognitive psychology (Scherer 1984), discourse analysis (Ungerer 1997), pragmatics (Caffi and Janney 1994), and classical rhetoric (Lausberg 1960).

³⁷ In his discussion of Perelman and Olbrechts-Tyteca's treatment of figures of speech in *The New Rhetoric*, Plantin (2009b, p. 335) emphasizes the link between figures of speech and emotions. In his view, figures are to be analyzed as discourse strategies. "Emotive" figures such as *exclamatio* and *aversio* can play a crucial role in the discursive construction of emotions.

approach seen as interactional strategies that amount to a form of *framing* (Plantin 2011, p. 189).

9.4.2 Marianne Doury

Marianne Doury is a researcher at the Laboratoire Communication et Politique of the CNRS (National Centre of Scientific Research) in Paris. Her work on argumentation is characterized by a descriptive approach that is deeply influenced by Plantin's insights on argumentation (Doury 2006). The purpose of Doury's descriptive approach is "to account for any discourse – be it monological or interactional – in which argumentative processes can be identified" (2009, p. 143). In her view, the aim of an analysis of argumentative discourse should be "to highlight the discursive and interactional devices used by speakers who face conflicting standpoints and need to take a stand in such a way as to hold out against contention" (2009, p. 143). Doury combines insights from argumentation theory with insights from conversation analysis to enable an adequate analysis of argumentation in interactional contexts.

Doury's research focuses on argumentative exchanges in polemical contexts. It aims at describing the spontaneous argumentative norms revealed by the observation of such exchanges, thus contributing to a form of argumentative "ethnography" (Doury 2004b). To this end, Doury has studied how argumentation takes place within various communicative settings, such as everyday conversations, TV talk shows, internet newsgroups, letters to the editor, and public debates (1997, 2004a, 2005).

Doury studies actual argumentative practices "to assess to what extent the academic sub-classifications have counterparts in the folk pre-theorization of argumentation [...] as revealed by discursive clues" (Doury 2009, p. 141). A good example of her descriptive approach is the parallel she draws between the scholarly conceptions of arguments based on a relation of comparison and ordinary arguers' conceptions of these types of argument (Doury 2009). To identify the categories recognized by ordinary arguers, Doury looks at *explicit designations* ("Let's take an example"), *indicators* ("That's like saying"), and *refutations* ("That is not comparable") of comparison arguments that are used in argumentative texts and debates (2009, p. 143).

In order to identify the criteria ordinary arguers use in evaluating arguments, Doury takes two types of discursive clues into account: refutative moves and meta-argumentative comments (2005, p. 146). An example of the former is an arguer criticizing their opponent's argument from authority by contesting the authority's status, thus making it clear that for this arguer an appeal to authority should be considered as fallacious if no consensus exists among the peers as to whether or not the authority concerned may constitute a reliable authority on the matter at issue. An example of the latter is the French word *amalgame*, which is used to accuse others of committing various kinds of fallacies, such as hasty generalizations, wrong comparisons, and erroneous causal relationships (Doury 2005, p. 160).

According to Doury, identifying the labels that arguers use to characterize their own argumentative devices and those of their opponents is an adequate method to investigate the normative dimension of everyday argumentation, since such labels are often evaluative in nature (2009, p. 37).

Together with Christian Plantin and Veronique Traverso, Doury edited a volume on the role of emotions in interactions (Plantin et al. 2000). In her own contribution to this study, she investigates how in discussions over scientific themes accusing another party of an emotional reaction can be seen as a way of evaluating the other's position as nonscientific and thus as a refutation *by way of an accusation of being emotional*.

9.4.3 Ruth Amossy

Ruth Amossy is an emeritus professor at Tel Aviv University of the French department and incumbent of the Glasberg Chair for French Culture.³⁸ Her research in the domain of argumentation, rhetoric and discourse analysis has focused on the function of stereotypes and common knowledge (*doxa*) in argumentative interactions (Amossy 1991, 2002; Amossy and Herschberg Pierrot 2011), on the notion of *ethos* (Amossy 1999, 2001, 2010), and on developing a socio-discursive approach to arguments labeled *argumentation in discourse* (Amossy 2005, 2006, 2009a; Koren and Amossy 2002).

Argumentation in discourse serves as an analytical framework consisting of a combination of insights from pragmatics, discourse analysis, and Perelman's new rhetoric, which is applied to both literary and nonliterary discourse (Amossy 2002, p. 466). This approach takes a middle position between Ducrot and Anscombe's view of argumentation as a linguistic phenomenon, pertaining to language and not to discourse, and Perelman's rhetorical view of argumentation as "an overall art of persuasion based on discursive efficacy and consisting of verbal strategies intended to make an audience adhere to a given thesis" (Amossy 2005, p. 87). According to the argumentation in discourse approach, in argumentation, "verbal means are used not only to make the addressee adhere to a specific thesis, but also to modify or reinforce his representations and beliefs, or simply to orient his reflexion on a given problem" (Amossy 2005, p. 90). Just like Plantin's approach, the argumentation in discourse approach makes use of the notions of polyphony and intertextuality to explain how argumentation can also be at issue in discourses in which there is no open confrontation:

³⁸ Together with Rosalyn Koren, Amossy directs the research group ADARR (Analyse du Discours, Argumentation, Rhétorique), which focuses on discourse analysis, argumentation, and rhetoric. The ADARR group publishes the online journal *Argumentation et Analyse du Discours*, which appears twice a year. Amossy's specialisms include French nineteenth and twentieth century literature, literary theory, argumentation theory, rhetoric, and discourse analysis.

The social nature of discourse accounts for its inherent dialogism which in turn explains how an utterance that does not voice the argument of the Other is still informed by it and provides an answer to objections, or to antagonistic opinions, circulating in the verbal surrounding of the speaker. [...] “argumentation in discourse” [...] explores any saying in an intertextual, or rather interdiscursive space, where it acquires its dialogical dimension, thus appearing as a reaction and a more or less direct answer to preexisting utterances. (Amossy 2005, p. 89)

Within the framework of argumentation in discourse, a distinction is made between the *argumentative aim* to be found in certain kinds of discourse intended to persuade and the *argumentative dimension* inherent in any text (Amossy 2002, p. 388). Texts that do not overtly discuss a controversial subject, even texts providing factual information or creating a fictional world, can still be seen as persuasive “insofar as they try to orient the audience’s ways of seeing and judging the world” (Amossy 2005, p. 90). In Amossy’s view, texts can have various degrees of argumentativity, depending on the genre of discourse in which a more or less strong attempt at persuasion occurs:

The arguer may deliberately try to persuade her addressee in a controversial matter where divergent points of view are clearly expressed, like in a debate or an editorial; but she can also orient ways of looking at things and interpreting the world without putting forward any thesis, like in ordinary conversation or in an information article. [...] In all cases, however, and even when there is no overt controversy, discourse is pervaded by a general argumentativity [...]. It always answers some explicit or hidden question, or at least suggests a way of looking at the surrounding world. (Amossy 2009, p. 254)

In the argumentation in discourse approach, “an analysis of the text in all its verbal and institutional dimensions is needed in order to see how it sets out to construct a point of view and share it with the audience” (Amossy 2005, p. 91). In this type of argumentative analysis, *doxa* is not “denounced as a sign of banality or as the mask of ideology,” but seen as “the very condition of intersubjectivity and thus the source of discursive efficacy” (Amossy 2002, p. 469).³⁹ The writer and the orator have to draw on accepted views “in order to enable a fruitful exchange and convincingly present their case” (p. 469). Amossy distinguishes between two major categories of *topoi* that belong to the *doxa*:

those that rely on logico-discursive patterns believed to be universal and those built on social and cultural beliefs pertaining to a given ideology. The first correspond to Aristotle’s *topoi koinoi*; the second, rooted in Aristotle’s *specific topoi* that were later called commonplaces, embrace all kinds of stereotypical phenomena designated today by such terms as *commonplaces*, *received ideas*, *stereotypes*, *clichés*. (Amossy 2002, p. 476)

The aim of the text analysis is, according to Amossy (2002), to identify both types of *topoi* and thereby lay bare the double doxic layers on which a discourse is built (p. 478).

³⁹ This approach to *doxa* is radically opposed to Roland Barthes conception of *endoxa*, where *doxa* is considered to prevent genuine communication and hinder individual thinking (Barthes 1988).

The work of Amossy and that of Plantin and Doury can be seen as interconnected in the sense that their approaches are all aimed at describing diverse argumentative practices and discourse patterns. In this endeavor, each of them makes use of a combination of insights from (classical and new) rhetoric and modern argumentation theory (argument schemes, fallacies). Although their study of argumentation is focused on the level of discourse, and not merely on the linguistic level, the three authors share an outspoken interest in verbal means employed by ordinary arguers in argumentative texts and discussions. In their analysis of everyday argumentative discourse, all three of them make use of discourse analytical tools.

9.5 The Luganese Semantic-Pragmatic Approach

Characteristic for the approach to argumentation at the University of Lugano is the use of the so-called Argumentum Model of Topics in the analysis of argumentation. We will start this section with a discussion of this model. Next, we will give a characterization of two important research projects by the Luganese argumentation group.

9.5.1 The Argumentum Model of Topics

Rigotti's research in the field of argumentation in the first decade of the twenty-first century, which has for a large part been undertaken together with Sara Greco Morasso, has concentrated on the construction of a model (*Argumentum*) supporting the design and production of argumentative discourse in specific domains such as finance, public institutions, and the media (Rigotti and Greco 2006; Rigotti and Greco Morasso 2009, 2010). Since topics are a key element in this model, it is generally referred to as the *Argumentum Model of Topics* (AMT). In her monograph *Argumentation in Dispute Mediation: A Reasonable Way to Handle Conflict*, Greco Morasso (2011) applies the Argumentum Model of Topics in combination with pragma-dialectical insights to a corpus of mediation cases. Her argumentative analysis shows how the mediator's moves actually help conflicting parties to discuss reasonably. Another example of a Luganese researcher making use of the framework of the Argumentum model in combination with insights from pragma-dialectics is Rudi Palmieri, who specializes in the study of argumentation in a financial context (2009).

Rigotti and Greco adopt the following definition of topics:

Topics is the component of argumentation theory by which all (theoretically possible) relevant arguments in favour and against any standpoint are generated by specifying their inferential structure through a system of loci. (2006)

The Argumentum model aims at giving a representation of argument schemes that is consistent and coherent, takes into account modern semantics

and pragmatics, and proposes a taxonomy of loci which allows for applying the model to specific argumentative practices in modern society (Rigotti 2009, p. 161).

Making use of the pragma-dialectical distinction between procedural and material (or substantive) starting points (van Eemeren and Grootendorst 2004, p. 60; van Eemeren and Houtlosser 2002, p. 20), Rigotti and Greco Morasso (2010) argue that an argument scheme combines a procedural starting point – the inferential connection (or: maxim) that is activated – with a material starting point guaranteeing the applicability of the maxim to the actual situation considered in the argument. They characterize their proposal as follows:

We propose to apply the notions of material and procedural starting points to identify the different nature of premises at work in the argument scheme. The precise reconstruction of these different types of premises and, so to say, the “discovery” of their intertwining connection is one of the main tenets of the AMT. (Rigotti and Greco Morasso 2010, p. 493)

In order to give an accurate description of the *procedural* starting point, Rigotti and Greco Morasso think that in the relation between a *locus* and the complete argument scheme, three levels should be distinguished:

1. The level of the *locus* itself. This level concerns the ontological relation on which a case of argumentative reasoning is based (e.g., the analogy relation or the relation between cause and effect).
2. The level of inferential connections or maxims that each ontological relation gives rise to (for instance, “If the cause is present, the effect must also occur”).
3. The level of the logical form, which is activated by a maxim (e.g., *modus ponens* in the case of the maxim “What holds for the genus also holds for the species”).

The Argumentum model also makes it possible to account for the *material* starting point that is in real occurrences of arguments inherent to the argument scheme by identifying “the source of the force of the statement presented as an argument in relation to the statement presented as a standpoint” (Rigotti and Greco Morasso 2010, p. 500). How this works can be made clear by means of example (21):

(21) A: Should we travel by train or by car?

B: Remember the traffic jams on New Year’s Eve? And today is our national holiday!

Making use of van Eemeren and Grootendorst’s (1992a) analysis of the argument scheme of analogy, Rigotti and Greco Morasso reconstruct B’s argumentation as follows:

1. It is true of this evening (our national holiday) that there will be traffic jams.
2. Because the fact that there were traffic jams was true for New Year’s Eve.
3. And the national holiday is comparable to New Year’s Eve.

(Rigotti and Greco Morasso 2010, pp. 499–500)

According to Rigotti and Greco Morasso, that the national holiday and New Year’s eve are comparable needs further backing. This backing could be provided by the premise “that both celebrations are part of ‘a common functional genus’ –

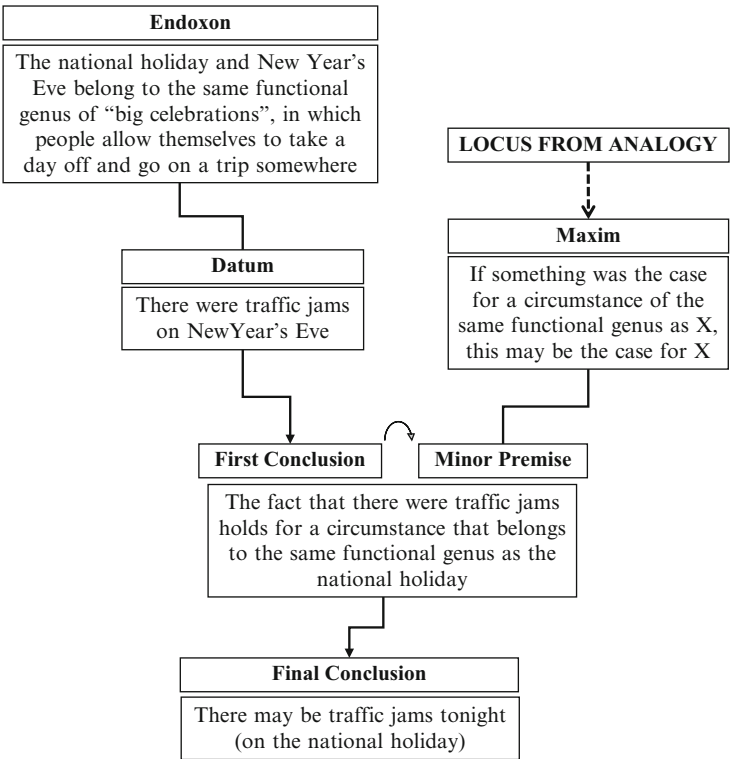


Fig. 9.2 AMT’s schematic representation of the New Year’s Eve-national holiday analogy argument

that of ‘big celebrations’, in which people allow themselves to take a day off and go on a trip somewhere” (Rigotti and Greco Morasso 2010, p. 500). Since the premise constituting the backing of the comparability is an assumption based on the discussants’ shared knowledge of the two celebrations at issue, according to Rigotti and Greco Morasso, it can be seen as a typical instance of a material starting point. This type of starting point these authors consider is comparable to the Aristotelian notion of *endoxon*: an opinion that is accepted by the relevant public or by the opinion leaders of the relevant public. In Fig. 9.2, a schematic representation according to the Argumentum Model of Topics of the New Year’s Eve-national holiday analogy argument is presented.

In sum, the *locus* is seen by Rigotti as a “sub-generator” of argumentative procedures consisting of one or more maxims in the form of truth conditions linking the truth value of the standpoint to the truth value of propositions that refer to a specific aspect of the ontology of the standpoint and are already accepted by the intended public. (Rigotti 2009, p. 163)

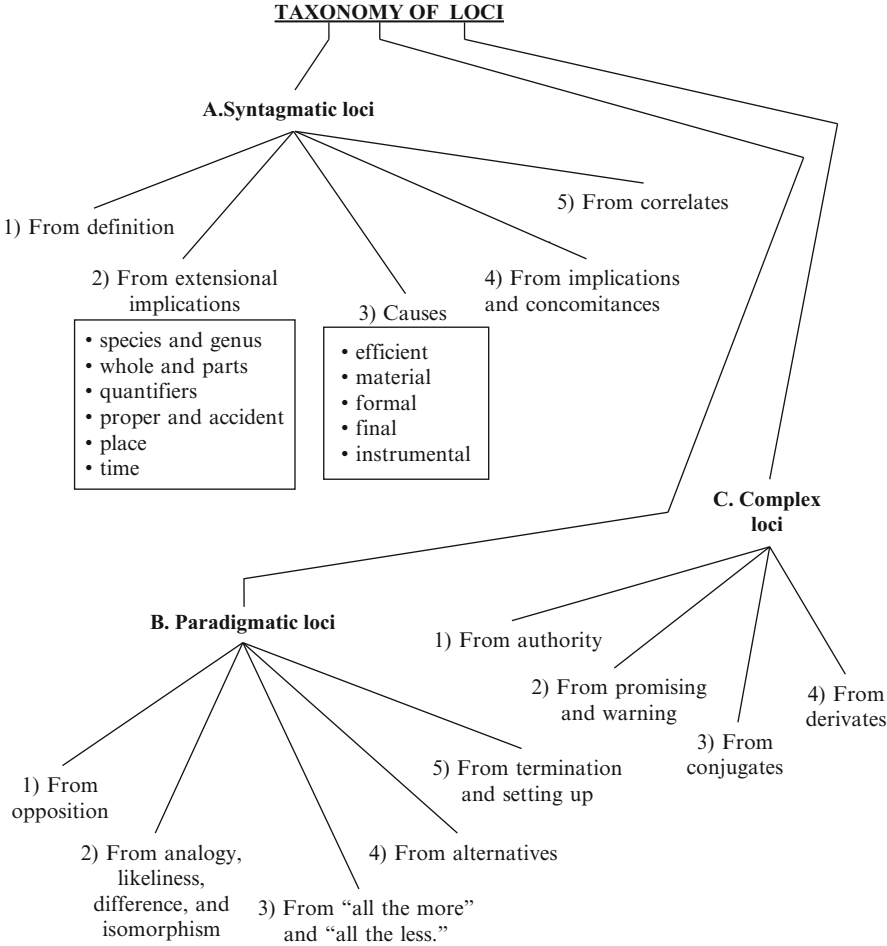


Fig. 9.3 Rigotti and Greco’s taxonomy of argumentative loci

The notion of “hooking point” of the locus to the standpoint plays a crucial role in the Argumentum Model of Topics.⁴⁰ Rigotti defines this hooking point as “the aspect of the standpoint that the maxims of a certain locus refer to.” This aspect also gives name to the *locus* (2009, p. 163). Drawing on Themistius’s classification, which was also followed by Boethius, Rigotti and Greco propose a taxonomy of *loci* that is represented in Fig.9.3:

⁴⁰ According to Rigotti, the notion of hooking point corresponds with Boethius’s notion of “topical difference.”

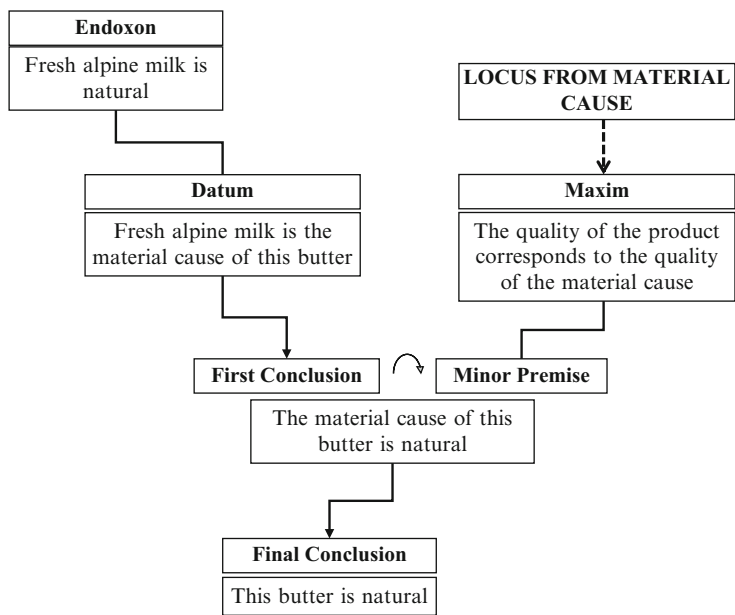


Fig. 9.4 AMT’s representation of the fresh alpine milk example

Rigotti applies an Argumentum model analysis to the following example of an advertisement, which can be seen as an argument (22) based on the *locus* of material cause (Rigotti 2009, p. 169):

(22) This butter is natural. It was made from fresh alpine milk.

In Fig.9.4 a representation according to the Argumentum model is presented (Rigotti 2009, p. 170).

9.5.2 Cultural Keywords and Modalities

Together with Rocci, Rigotti has developed an approach to cultural keywords that combines semantic research with insights from argumentation theory. Rigotti and Rocci give the following definition of cultural keywords:

words that are particularly revealing of a culture and can give access to the inner workings of a culture as a whole, to its fundamental beliefs, values, institutions and customs. In short, [...] words that *explain* a culture. (Rigotti and Rocci 2005, pp. 125–126)

In reaction to one of the problems with keyword research pointed out by Wierzbicka (1997, p. 22), “that there is no objective method to identify key words in a culture,” Rigotti and Rocci argue that a rationale for testing cultural

keywords can be provided by looking at the role played by words in argumentative texts: “considerations from argumentation theory can help significantly in the complex task of hypothesizing and testing candidates to the status of keywords in a given culture” (Rigotti and Rocci 2005, p. 125). Their approach consists in combining semantic research on cultural keywords with a classic enthymematic approach to argument analysis:

We propose to consider as serious candidates for the status of cultural keywords the words that play the role of *terminus medius* in an enthymematic argument, functioning at the same time as pointers to an endoxon or constellation of endoxa that are used directly or indirectly to supply an unstated major premise. More precisely, words that typically have this kind of function in public argumentation within a community, are likely candidates to the status of keywords of that community. (Rigotti and Rocci 2005, p. 131)

The analysis of the following example is illustrative of Rigotti and Rocci’s approach:

(23) He’s a traitor. Therefore he deserves to be put to death (Rigotti and Rocci 2005, p. 130).

In a reconstruction of this enthymematic argument, an adequate unexpressed premise needs to be added, which could be “Traitors deserve to be put to death.” The argumentation is thus reduced to the following syllogistic form:

Major premise: *Traitors* deserve to be put to death (unstated)

Minor premise: He is a *traitor*

Conclusion: He deserves to be put to death.

According to Rigotti and Rocci, the word “traitor” plays an important role in both the logical and the communicative structures of the argument:

From a logical viewpoint, it appears in the subject of the major premise and in the predicate of the minor premise, playing the role of *terminus medius* in the structure of the syllogism. From a communicative viewpoint it plays an important role in the recovery of the unstated premise. (Rigotti and Rocci 2005, p. 130)

In Rigotti and Rocci’s view, the word traitor is associated with a number of culturally shared beliefs and values (or at least easily accessible beliefs and values) that confirm the plausibility of the unstated premise. This type of culturally shared beliefs can, so they argue, be identified with the Aristotelian notion of *endoxon* (Rigotti and Rocci 2005, pp. 130–131).

Another research project that Rocci started working on in 2005 focuses on the role of modal expressions in the reconstruction of argumentation. The aim of this project is to investigate the relationship between argumentation and the semantic and pragmatic functioning of lexical and grammatical markers of modality in Italian (Rocci 2008, p. 577). By making use of the theory of relative modality developed in linguistic semantics, Rocci gives an analysis of different types of modals. With this semantic analysis as a starting point, he attempts to establish under what conditions modal markers can act as argumentative indicators and what kind of cues they provide for the reconstruction of arguments (Rocci 2008, p. 165). The main conclusions on the role of modals as indicators that Rocci draws are the following.

Epistemically interpreted modals (modal expressions by means of which speakers indicate to what extent they are prepared to commit themselves to the truth or acceptability of a proposition) (1) can serve as *direct* indicators of standpoints, (2) make explicit the degree of commitment to the standpoint, and enable the anaphoric recovery of premises. Non-epistemic modals (for instance, modals expressing a deontic or ontological necessity or possibility) (1) can serve as *indirect* indicators of standpoints and (2) can convey information about the argument scheme used by the arguer.

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10.1 Origins and Development

The pragma-dialectical theory of argumentation was initiated at the University of Amsterdam by Frans van Eemeren and Rob Grootendorst (1944–2000) in the 1970s and developed over the next four decades. Characteristically, argumentation is in

this theory viewed from a perspective that combines a communicative angle inspired by pragmatic insights from speech act theory and discourse analysis with a critical angle inspired by dialectical insights from critical rationalism and formal dialectical approaches (see Chap. 6, “Formal Dialectical Approaches”). Because people use argumentation in all spheres of life to convince others of their views regarding what to believe, think, or do, van Eemeren and Grootendorst considered it of primary importance to create an adequate theoretical basis for improving its analysis and evaluation as well as its production. Their master plan for developing such a theoretical basis involved progressing step by step from an abstract ideal model of argumentation to the concrete reality of the various kinds of argumentative practices.

According to van Eemeren and Grootendorst, the systematic combination of empirical description and critical normativity required for developing an adequate theory of argumentation calls for a multidisciplinary – and eventually interdisciplinary – approach integrating insights from philosophy and logic as well as communication studies, linguistics, psychology, and other disciplines. In *Speech Acts in Argumentative Discussions* (van Eemeren and Grootendorst 1984), they explained the philosophical and theoretical premises of their approach for the first time in English. Their conceptual framework for the analysis and evaluation of argumentation they laid out in *Argumentation, Communication, and Fallacies* (van Eemeren and Grootendorst 1992a), paying special attention to the characterization and classification of the fallacies. After Grootendorst’s premature death in 2000, van Eemeren published in *A Systematic Theory of Argumentation* an overview of how their theorizing had developed further in the 1990s (van Eemeren and Grootendorst 2004).

Van Eemeren and Grootendorst’s theoretical reflections on the application of the pragma-dialectical theory to the analysis of real-life argumentative discourse, conducted together with Sally Jackson and Scott Jacobs, resulted in the monograph *Reconstructing Argumentative Discourse* (van Eemeren et al. 1993). Qualitative empirical research concerning the reality of argumentative discourse, undertaken by van Eemeren in collaboration with Peter Houtlosser and Francisca Snoeck Henkemans, led to the publication of *Argumentative Indicators in Discourse* (van Eemeren et al. 2007). The results of quantitative empirical research that van Eemeren carried out with Bart Garssen and Bert Meuffels, in which the intersubjective acceptability of the pragma-dialectical norms for judging the reasonableness of argumentative discourse was experimentally tested, were reported in *Fallacies and Judgments of Reasonableness* (van Eemeren et al. 2009).

An important extension was given to the pragma-dialectical theory when van Eemeren introduced with Peter Houtlosser (1956–2008) the notion of strategic maneuvering to account for the fact that in argumentative discourse, arguers may be regarded to combine, in every argumentative move they make, their aiming for (rhetorical) effectiveness with their trying to maintain (dialectical) reasonableness. Houtlosser’s untimely death in 2008 prevented them from completing their project, but van Eemeren presented the theoretical framework of this extended pragma-dialectical theory 2 years later in *Strategic Maneuvering in Argumentative*

Discourse (van Eemeren 2010). Meanwhile Agnès van Rees had taken the extended theory in *Dissociation in Argumentative Discussions* as a starting point for the analysis of a conceptual technique that is frequently used in strategic maneuvering in argumentative discourse (van Rees 2009).¹

A great many other authors have made a contribution to the further development of the pragma-dialectical approach to argumentation, by means of doctoral dissertations or otherwise.² Most of them concentrate on examining argumentative discourse in specific communicative domains. Among them are Eveline Feteris, Harm Kloosterhuis, José Plug, and Henrike Jansen, who have been exploring the legal domain; Dima Mohammed, Corina Andone, Yvon Tonnard, Marcin Lewiński, Jan Albert van Laar, and Constanza Ihnen Jory, who have focused on the political domain; Lotte van Poppel, Roosmaryn Pilgram, Nanon Labrie, and Renske Wierda, who are engaged in research of the medical domain; and Jean Wagemans, and Eugen Popa, who are primarily examining the academic domain.

10.1.1 Overview of the Chapter

In this chapter, we sketch in Sect. 10.2 first the various components of the research program aimed at bringing together the normative and descriptive dimensions of the pragma-dialectical approach. The “normative pragmatic” rationale of this research program takes us, in Sect. 10.3, to the meta-theoretical starting points of the research. These meta-theoretical starting points are implemented in the theoretical model of a critical discussion, described in Sect. 10.4. In Sect. 10.5 we explain that analyzing argumentative discourse amounts in pragma-dialectics to giving a theoretically motivated reconstruction of the discourse in terms of a critical discussion. The rules applying to the speech acts performed in the various stages of a critical discussion are discussed in Sect. 10.6. In Sect. 10.7, we demonstrate the appropriateness of the model for evaluating argumentative discourse by making clear that all violations of the rules for critical discussion can be characterized as fallacies.

With the help of the notion of strategic maneuvering, we introduce, in Sect. 10.8, the extended pragma-dialectical theory by explaining how in argumentative discourse pursuing the rhetorical aim of achieving effectiveness and the dialectical aim of maintaining reasonableness is to be reconciled. In Sect. 10.9, we discuss the conventionalization of the various communicative practices in communicative

¹ Some of the monographs mentioned were translated (van Eemeren and Grootendorst 1984, into Russian (1994c) and Spanish (2013); van Eemeren and Grootendorst 1992a, into Bulgarian (2009b), Chinese (1991b), French (1996), Romanian (2010), Russian (1992b), and Spanish (2007); van Eemeren and Grootendorst 2004, into Bulgarian (2006), Chinese (2002), Italian (2008), and Spanish (2011); van Eemeren 2010, into Italian (2014) and Spanish (2013b) [Chinese and Japanese translations are in preparation]).

² Since 2010 they are all part of the International Learned Institute for Argumentation Studies (ILIAS).

activity types and the impact this conventionalization has on the strategic maneuvering. In Sect. 10.10, we view the fallacies as derailments of strategic maneuvering in which the boundaries of dialectical reasonableness as they are drawn in a specific communicative activity type have been overstepped.

In Sect. 10.11, we discuss qualitative empirical research of argumentative reality, concentrating in the first place on the use of indicators of argumentative moves in the discourse. Our discussion of quantitative empirical research of argumentative reality, in Sect. 10.12, concentrates on the identification of argumentative moves and the intersubjective acceptability of the pragma-dialectical rules for critical discussion. In Sect. 10.13, our focus is on the application of the extended pragma-dialectical theory to strategic maneuvering taking place in different kinds of macro-contexts. We pay attention first to the legal domain, then to the political, the medical, and the academic domains. The chapter concludes, in Sect. 10.14, with a discussion of the various kinds of criticisms that have been advanced against the pragma-dialectical approach.

10.2 The Normative Pragmatic Research Program

According to van Eemeren and Grootendorst, argumentation is characteristically aimed at resolving a difference of opinion on the merits by means of a critical exchange of argumentative moves between the protagonist of the standpoint at issue and an antagonist who has doubt as to the acceptability of this standpoint or even rejects it. Because in this view argumentation is always part of an argumentative discourse taking place between the people involved, the theorizing about argumentation belongs to the study of communication and interaction known as *pragmatics*. Because, in addition, in this view argumentation is always aimed at resolving a difference of opinion on the merits, so that its quality and possible flaws are to be measured by critical standards of reasonableness, the theorizing about argumentation is also part of the study of regimented dialogues known as *dialectic*. In van Eemeren and Grootendorst's concept, in the *pragma-dialectical* theory, the descriptive pragmatic dimension and the normative dialectical dimension of argumentation are to be systematically linked together. As a consequence, their theorizing about argumentation is part of the broader scientific enterprise that van Eemeren has characterized as *normative pragmatics* (van Eemeren 1986, 1990).

To be able to connect the normative dimension of dialectic systematically with the descriptive dimension of pragmatics, a complex normative pragmatic research program needs to be carried out, encompassing five interrelated components (van Eemeren 1987, 1990; van Eemeren and Grootendorst 1991a) (see also Sect. 1.2 of this volume). First, a *philosophical* component is required, in which a philosophy of reasonableness is articulated. Second, in the *theoretical* component, grounded in this philosophical ideal, a model for reasonable argumentative discourse is developed. Third, in the *empirical* component, argumentative reality is investigated methodically to acquire an accurate understanding of the actual proceeding of argumentative discourse. Fourth, starting from the results of the philosophical,

theoretical, and empirical research, in the *analytical* component, the conceptual tools are developed for analyzing argumentative discourse as it occurs in argumentative reality in terms of the theoretical framework provided by the model. Fifth, starting from a solid analysis based on insights gained in the other components, in the *practical* component, the problems are tackled that are involved in dealing adequately with the exigencies of the various kinds of argumentative practices. The pivotal component of the normative pragmatic research program is the analytical component, because it provides the tools for reaching a well-considered integration of descriptive pragmatic commitments and normative dialectical commitments.

In the *philosophical component* of the research program, the central question is what it means to be reasonable in argumentative discourse. In the study of argumentation, this question needs to be the subject of permanent systematic reflection. As it happens, there is no general agreement among argumentation theorists as to what reasonableness involves. Following the distinctions suggested by Toulmin (1976) in *Knowing and Acting*, rhetorically oriented argumentation theorists may be expected to adopt an “anthropological” philosophy of reasonableness, whereas dialectically oriented theoreticians favor a “critical” philosophy of reasonableness. This means that reasonableness is for rhetoricians primarily dependent on agreement among the members of a communicative community, while it depends for dialecticians in the first place on compliance with critical testing procedures. Pragma-dialecticians share the critical philosophical perspective and associate reasonableness with resolving differences of opinion on the merits by subjecting the standpoints at issue to a regimented critical discussion. Because their philosophy of reasonableness favors the methodical pursuit of argumentative exchanges in accordance with appropriately regulated discussion procedures, it can be characterized as a “critical rationalist” philosophy (van Eemeren and Grootendorst 1984, 1994b).

In the *theoretical component*, the central aim is to develop a model of argumentative discourse that can serve as a conceptual and terminological framework for the study of argumentation. The theoretical model gives shape to the philosophical ideal of reasonableness by specifying in terms of types of argumentative moves and soundness conditions for making these moves what pursuing this ideal amounts to. If the model serves its purpose well, it has heuristic, analytic, and critical functions in dealing with the production, analysis, and evaluation of argumentative discourse. The model of a *critical discussion* developed by van Eemeren and Grootendorst (1984, 2004) specifies for the various stages of the resolution process which types of speech acts can contribute to resolving a difference of opinion on the merits. A set of rules for critical discussion specifies which soundness conditions these speech acts need to observe to fulfill a constructive role in the resolution process. The model is “pragma-dialectical” because it defines the argumentative moves that are made in a *pragmatic* vein as communicative and interactional speech acts and regulates the performance of these speech acts in a *dialectical* vein in a discussion procedure for having a critical exchange.

In the *empirical component*, the actual presentation, interpretation, and assessment of argumentative discourse as they take place in argumentative reality are

examined, concentrating in particular on the influence of factors relevant from the perspective of the theoretical model. The empirical research is *qualitative* when it relies on introspection and observation by the researcher and *quantitative* when it is based on numerical data and statistics. Qualitative research is primarily aimed at depicting specific traits of argumentative discourse or it consists of case studies. Quantitative research is in the first place aimed at testing experimentally certain theoretical hypotheses regarding the presentation, interpretation, or assessment of argumentative discourse. In principle, each of these two types of empirical research has a specific function in acquiring a better understanding of how in argumentative reality people deal with differences of opinion and to what extent they try to resolve these differences on the merits. In the pragma-dialectical research program, both qualitative and quantitative empirical research is carried out – the qualitative research generally being preparatory for the quantitative research. The empirical research is, of course, not aimed at legitimizing the model of a critical discussion. All the same, by indicating which factors are worth investigating because of their significance for resolving a difference of opinion on the merits, this model gives direction to the “cogency-centered” research (see van Eemeren et al. 2007, 2009).

In the *analytical component*, analytic instruments are developed for a systematic reconstruction of argumentative discourse in terms of the theoretical model. In this endeavor a connection is made between the way in which argumentative discourse is envisaged in the theoretical model and the way in which it appears in argumentative reality. A reconstruction of argumentative discourse taking place from a pragma-dialectical perspective is “resolution-oriented:” it is to result in an *analytic overview* of all those, and only those, elements in the discourse that are pertinent to a critical evaluation because they can play a part in resolving a difference of opinion on the merits.³ The pragmatic dimension of this reconstruction is that argumentative discourse is viewed as a contextualized exchange of speech acts taking place in an actual communicative and interactional environment. The dialectical dimension is that the exchange of speech acts is viewed as aimed at resolving a difference of opinion on the merits by means of a critical discussion. In this way, the analytical component of the pragma-dialectical research program serves to bridge the gap between argumentative reality and the theoretical ideal (van Eemeren and Grootendorst 1990, 1992a; van Eemeren et al. 1993).

Finally, in the *practical component*, the attention focuses on how exactly argumentative discourse is conducted in the great variety of argumentative practices that have evolved in argumentative reality. Which analytic, evaluative, and productive skills do arguers need in order to display the competence required for participating satisfactorily in these contextualized argumentative activities? Promoting the development of such skills requires theoretical as well as empirical insight and should start from a reconstructive analysis that makes clear in which respects the actual state of affairs deviates from the ideal of conducting a critical

³ In hindsight, a potentially constructive move may not be constructive because it is fallacious. See Sect. 10.7.

discussion. Such an evaluation of the present situation is the basis for all praxiological advice that is to be given in practical interventions. In the pragma-dialectical approach, the evaluation takes the form of a methodical reflection on the quality of the argumentative practice concerned. The intervention boils down to proposing either amended procedures (“formats” or “designs”) for the exchange or specific methods for improving the analytic, evaluative, and productive skills of the arguers (see van Eemeren et al. 1993, pp. 178–183; van Eemeren et al. 2002a⁴, c). In giving substance to the “reflection-minded” practical component of the pragma-dialectical research program, all relevant philosophical, theoretical, empirical, and analytic insights gained in the other components are put to good use.

10.3 Meta-theoretical Starting Points

In carrying out the pragma-dialectical research program, argumentation is approached from four meta-theoretical starting points. These starting points are premises that precede the actual theorizing and indicate the general methodological principles in accordance with which the theorizing is to proceed. The four meta-theoretical starting points represent the methodological framework for the development of the pragma-dialectical theory of argumentation. When taken together they define the unique position of the pragma-dialectical approach, each starting point representing in principle a departure from other approaches to the study of argumentation.

The meta-theoretical starting points are pointers to the way in which the integration of the pragmatic and the dialectical dimension aimed for in pragma-dialectics can be achieved. They constitute the methodological basis for systematically combining in the research program the descriptive study of contextualized argumentative discourse in human communication and interaction and the normative study of argumentation in regimented critical exchanges. According to van Eemeren and Grootendorst in *Speech Acts in Argumentative Discussions* (1984), in order to achieve the desired integration, the subject matter under scrutiny in the study of argumentation is to be “functionalized,” “socialized,” “externalized,” and “dialectified.” Let us see what these meta-theoretical starting points amount to.⁵

First, *functionalization*. In formal and informal logical approaches but also in other studies, argumentation is often treated in purely structural terms as a complex of logical inferences or derivations.⁶ Structural descriptions have much to

⁴van Eemeren et al. (2002a) is translated into Albanian (2006a), Armenian (2004), Chinese (2006b), Italian (2011a), Russian (2002b), and Spanish (2006c) [Japanese and Portuguese translations are in preparation].

⁵For a more detailed exposition of the meta-theoretical starting points, see van Eemeren and Grootendorst (1984).

⁶For a well-articulated example of a structure-oriented logical approach to argumentation, see Fisher (2004).

recommend them, but in the case of argumentation, they do not do justice to the functional rationale of the design of the discourse. As a result, the basic function of argumentation in the management of disagreement tends to be ignored. Argumentation arises in response to, or in anticipation of, a difference of opinion, and the lines of justification that are chosen are contrived to realize the purpose of resolving this difference of opinion in the case concerned. The need for argumentation, the requirements the justification by means of argumentation has to fulfill, and the structure of the argumentation are in principle all adapted to the doubts, objections, and counterclaims that have to be dealt with, and this is reflected in the speech acts that are advanced. The theorizing about argumentation should therefore concentrate in the first place on the specific functions that the speech acts put forward in argumentative discourse fulfill in managing disagreement. This is why, according to pragma-dialecticians, in dealing with the subject matter of argumentation theory, “functionalization” is required.

Functionalization concentrates on making explicit how language (or another semiotic system) is used for realizing certain specific communicative and interactional purposes. Due to the fact that argumentative discourse occurs through speech acts and in response to speech acts, functionalization can be achieved by making use of insights from pragmatics concerning the performance of speech acts (Austin 1975; Searle 1969, 1979). By concentrating on the “disagreement space” created by the speech acts initiating the difference of opinion the argumentation is to resolve,⁷ a specification can be given of what is “at stake” in the discourse. The standpoints at issue can be identified, and starting from these standpoints, the communicative and interactional functions of the speech acts that are aimed at resolving the difference of opinion can be determined. After the functions of these speech acts have been identified, it becomes possible to specify their *identity conditions* and *correctness conditions*,⁸ so that a full definition can be provided of the argumentative moves concerned. In this way not only the standpoints at issue but also the argumentation that is advanced and the other argumentative moves that are made in the discourse are functionally described as speech acts, and the relationship between the various moves can be specified.⁹

Second, *socialization*. In approaches concentrating primarily on the epistemic function of argumentation in justifying standpoints, argumentation is usually viewed as a product resulting from an individual thought process aimed at establishing the truth of a statement.¹⁰ In such approaches the role of

⁷ The term *disagreement space* is introduced in Jackson (1992, p. 261).

⁸ For the distinction between identity conditions and correctness conditions, see van Eemeren and Grootendorst 1992a, pp. 30–31).

⁹ For a definition of the complex speech act of argumentation and its relationship with the speech act of advancing a standpoint, see van Eemeren and Grootendorst (1984, pp. 39–46; 1992a, pp. 30–33) and for an analogous definition of the speech act of advancing a standpoint Houtlosser (1995).

¹⁰ For an articulated example of a product-oriented nonsocialized approach to argumentation, see Johnson (1995, 2003, especially p. 48).

communication and interaction with others in arguing for the acceptability of standpoints – which may just as well be evaluative or prescriptive as descriptive standpoints – is as a rule largely neglected. Fundamental to argumentation however is that it involves an explicit or implicit dialogue between two or more people who have (or assume to have) a difference of opinion and make a joint effort to resolve the difference. As a consequence, argumentation always presupposes not only two different positions in a difference of opinion but also two different discussion roles in a dialogical argumentative exchange. The dialogical character of the way in which the disagreeing parties attempt to resolve their difference of opinion should be reflected in the theorizing about argumentation. This is why, according to pragma-dialecticians, in dealing with the subject matter of argumentation “socialization” is required.

Socialization involves taking due account of the fact that argumentation is always part of a discourse in which a party responds methodically to the questions, doubts, objections, and counterclaims of another party, which are in their turn instigated by the standpoints and arguments put forward by the first party. Various relevant aspects of the conduct of dialogical exchanges, from the principle of turn-taking to the division of tasks in the dialogue, have been carefully examined in discourse analysis and dialogue theory. Insights from these disciplines, in particular from the normative study of argumentative dialogues as exemplified in formal dialectic (Barth and Krabbe 1982), inform the pragma-dialectical view of socialization in argumentation.

Socialization has been given shape in the pragma-dialectical theorizing by defining the two roles in the dialogue in terms of “protagonist” and “antagonist” of a standpoint and specifying the argumentative obligations involved in assuming these discussion roles. Like the “proponents” in the dialogue games of formal dialectic, in argumentative discourse protagonists have the task to defend their standpoints systematically against all challenges the antagonists make. Similar to that of the “opponents” in formal dialectic, the task of antagonists is to respond critically to all positions the protagonists assume until they have jointly reached an outcome. The cooperative communicative and interactional basis of argumentative discourse is thus reflected in the way in which the discussion tasks of the participants are defined, in the argumentative moves they make, and in the way in which these moves relate to each other.

Third, *externalization*. In purely rhetorical approaches to argumentation, the effectiveness of argumentation is often linked to how the arguers and their audiences are supposed to feel or think. This means that such approaches rely heavily on speculative projections regarding the motives and attitudes underlying the production and reception of the moves that are made in argumentative discourse and tend to be characterized by psychologizing as a result.¹¹ This is not desirable for reasons of accountability, and it is not necessary either. In engaging in

¹¹ For an articulated example of a non-externalized and psychologizing approach to argumentation, see Perelman and Olbrechts-Tyteca (1969).

argumentative discourse, people explicitly or implicitly (and sometimes even indirectly) put up their standpoint for evaluation, and they do this in a way that is essentially open to public scrutiny. Instead of starting from presumed motives and attitudes of the parties taking part in the discourse, the theorizing about argumentation should therefore be directed at explicating what these parties can be held accountable for due to the things they have said in a particular context and against a certain informational background in the discourse. This is why, according to pragma-dialecticians, in dealing with the subject matter of argumentation theory “externalization” is required.

Externalization boils down to determining the commitments of the parties based on the way in which they have expressed themselves in the discourse and the accountabilities ensuing from the starting points of the communicative activity type in which they take part. The commitments that are ascribed to the parties must be (1) externalized by the parties themselves in the discourse, (2) externalizable from what has been said in the discourse, or (3) on other grounds regarded as understood in the discourse. In externalizing the commitments of the parties, logical as well as pragmatic insights concerning presuppositions and implications or implicatures can be exploited (Grice 1989). The main theoretical source that can be utilized however is, again, speech act theory. This theory makes it possible to describe the commitments assumed in the discourse systematically and precisely in terms of the fulfillment of identity and correctness conditions. In a speech act perspective, notions such as “disagreeing” and “accepting,” which are vital for characterizing the argumentative commitments of the parties, can be externalized in a way that gives them a concrete and publicly accessible meaning. Instead of being treated as “internal” states of minds, these notions can thus be defined in terms of specific discourse activities. “Disagreeing” is then conceptualized as an opposition among speech acts interlocked within a common discourse activity, while “accepting” is defined as providing the preferred response to an arguable act. Starting from these externalizations, the notion of “being convinced,” which is crucial to judging the effectiveness of argumentation, can be defined as taking up the commitments involved in performing the speech act of accepting the standpoint at issue in the disagreement.¹²

Fourth, *dialectification*. Discourse and conversation analysts dealing with argumentation generally restrict themselves to describing argumentation as it occurs in argumentative reality from the (“emic”) perspective of the participants.¹³ The same descriptive approach is taken by the “new rhetoricians” and basically also by

¹² This response can be viewed as the intended “perlocutionary” effect of argumentation. For a discussion of the relation between the illocutionary act complex of “argumentation” and the perlocutionary act of “convincing,” see van Eemeren and Grootendorst (1984, pp. 47–74), Jacobs (1987, pp. 231–233), and van Eemeren (2010, pp. 36–39).

¹³ See for an articulated example of a descriptive, “emic” approach Doury (2004, 2006). The pragma-dialectical take on Pike’s (1967) distinction between an “internal” *emic* approach to discourse, which is participant-centered, and an “external” *etic* approach, which is theory-driven, is discussed in van Eemeren (2010, pp. 137–138).

“persuasion researchers.” If, however, argumentation theory is to be envisioned as a discipline that should enable us to judge argumentative discourse critically for its contribution to resolving a difference of opinion on the merits, a normative approach is required that starts from a theoretically motivated external (“etic”) perspective. Like other normative argumentation theorists, pragma-dialecticians are out to promote a reasonable exchange of argumentative moves that leads to an outcome based on the quality of the argumentation that is advanced and do not content themselves with indifferently whatever outcome puts the difference of opinion to an end. They consider argumentation to be part of a critical testing process aimed at determining the tenability of the standpoints at issue in a difference of opinion. Because this testing process is to be carried out in a constructive and well-regulated way to ensure a reasonable exchange, the theorizing about argumentation should in their view be aimed at developing a critical discussion procedure that does not allow argumentative moves to go astray. This is why, according to pragma-dialecticians, in dealing with the subject matter of argumentation theory, “dialectification” is required.

Dialectification means that argumentation is put in the perspective of a critical discussion aimed at resolving a difference of opinion on the merits and subjected to rules incorporating the standards of reasonableness that need to be observed in argumentative discourse for achieving that purpose. This means that the dialectical procedure for critical discussion that is to be developed in the pragma-dialectical theory of argumentation must consist of rules that have both “problem-solving validity,” in the sense that they do indeed further the resolution of differences of opinion on the merits, and “conventional validity,” in the sense that they are intersubjectively acceptable to the discussants.¹⁴ Dialectification can be achieved by developing, based on a conception of reasonableness inspired by “critical rationalist” insights (Popper 1972, 1974; Albert 1975), an ideal model for exchanging speech acts in a critical discussion that gives substance to fundamentally dialectical insights (Crawshay-Williams 1957; Barth and Krabbe 1982) and excludes all fallacious moves from being accepted as reasonable.

10.4 The Model of a Critical Discussion

In order to clarify what is involved in viewing argumentative discourse as aimed at resolving a difference of opinion on the merits, in the pragma-dialectical theory of argumentation, the theoretical notion of *critical discussion* is given shape in an ideal model specifying the various stages that are to be distinguished in the resolution process and the speech acts constituting the argumentative moves

¹⁴ For the notions of *objective* (or *problem-solving*) *validity* and *intersubjective* (or *conventional*) *validity*, which are based on insights developed by Crawshay-Williams (1957), see Barth and Krabbe (1982, pp. 21–22). See also Sects. 3.7 and 3.9 of this volume.

instrumental in the resolution process in each of the stages.¹⁵ In a critical discussion, the parties attempt to reach agreement about the acceptability of the standpoints at issue by finding out whether these standpoints are tenable against doubt and other criticism, given the mutually accepted starting points.¹⁶ To enable the parties to achieve this purpose, the dialectical procedure for regulating a critical discussion should not only deal with the inference relations between premises and conclusions but cover all speech acts that play a part in determining the acceptability of standpoints.

Resolving a difference of opinion on the merits is not identical with settling a dispute. A *settlement* of a dispute may be brought about by relying on a third party – say, a judge, a referee, or an empire – to put an end to it, without a resolution having been reached. A *resolution* means that the argumentative discourse has resulted in agreement between the parties involved on whether or not the standpoint at issue is acceptable. This means that either one party's argumentation has convinced the other party that the standpoint must be accepted or that this party has withdrawn the standpoint realizing that the argumentation cannot stand up to the other party's criticisms.¹⁷ Pivotal for a dialectical procedure aimed at methodically resolving differences of opinion on the merits is that it enables such decisions by the parties, so that it is clear at the end of the discussion whether the standpoint at issue or the critical doubt can be reasonably maintained.

The pragma-dialectical model of a critical discussion is a theoretically motivated idealization, not a utopia.¹⁸ This means that it should provide vital guidance for their conduct to people who wish to resolve their differences on the merits by means of argumentative discourse. The model must therefore be constructed in such a way that it can be a point of reference not only in analyzing and evaluating extant argumentative discourse but also in reflecting upon the production of (oral and written) argumentative discourse. The pragma-dialectical model indicates what

¹⁵ A critical discussion reflects a critical rationalist interpretation of the dialectic ideal of testing rationally any form of conviction – not only descriptive statements of a factual kind but also value judgments and practical standpoints about action (Albert 1975). Starting from the idea that in principle all human standpoints are open to criticism, in the pragma-dialectical approach, the guiding principle in testing the acceptability of standpoints is that they are to be subjected to a critical discussion.

¹⁶ In line with the critical rationalist perspective, testing standpoints by means of a critical discussion involves in the first place trying to detect inconsistencies between these standpoints and the arguer's other commitments (Albert 1975, p. 44).

¹⁷ Even in settling disputes and disagreements, it can be useful to conduct a critical discussion to find out to what extent a joint resolution is possible.

¹⁸ In spite of their different philosophical roots, the model of a critical discussion represents like Habermas's (1971, 1981) "ideal speech situation," an idealized state of affairs which differs from existing reality. However, instead of being instruments in achieving the Habermasian ideal of consensus, intellectual doubt and criticism are in pragma-dialectics viewed as the driving forces of intellectual and cultural progress, fostering a continual flux of ever more advanced opinions. Achieving consensus is in this process in each particular case just one of the necessary intermediate steps on the way to the next difference.

kind of points need to be taken into consideration in reflecting upon argumentative discourse and in what way the discourse can be put in an appropriate perspective. In this way the model serves heuristic and analytic functions in dealing with problems arising in preparing argumentative discourse and reconstructing the argumentative functions of the various kinds of speech acts performed in extant argumentative discourse. By providing a coherent set of norms for determining to what extent a given piece of extant argumentative discourse deviates from a course conducive to resolving a difference of opinion on the merits, the ideal model of a critical discussion also serves a critical function. When the heuristic, analytic, and critical functions of the model are all duly taken into account, a sound basis can be created for developing practical guidelines for a methodical improvement of the quality of argumentative practices.

The pragma-dialectical model of a critical discussion consists of four stages. These stages correspond with the different phases an argumentative discourse must pass through – albeit in actual discourse not necessarily explicitly and in this order – for resolving a difference of opinion in a reasonable way, i.e., on the merits. The four stages that are distinguished in a critical discussion are the “confrontation stage,” the “opening stage,” the “argumentation stage,” and the “concluding stage.”

A critical discussion is initiated through a *confrontation stage* in which a difference of opinion manifests itself through an opposition between one or more standpoints and nonacceptance of these standpoints.¹⁹ If there is no such confrontation, there is no need for a critical discussion because there is no difference of opinion to be resolved. In argumentative discourse as it occurs in argumentative reality, the confrontation stage corresponds with those parts of the discourse in which it becomes clear that there is a standpoint that meets with (real or projected) doubt or contradiction, so that a difference of opinion arises (or is expected to arise).

In the *opening stage* of a critical discussion, the division of the discussion roles of protagonist and antagonist is agreed upon, and the commitments that are to be in force during the entire discussion are identified – both the material (substantive) and the procedural commitments. The protagonist undertakes the obligation to defend the standpoints, while the antagonist assumes the obligation to respond critically to these standpoints and the protagonist’s defense.²⁰ This stage corresponds in argumentative discourse with the parts of the discourse in which the parties start manifesting themselves as such and determine the common starting points on

¹⁹ A difference of opinion emerges when one’s standpoint is not shared by the other. This does not necessarily mean that the other takes an opposite standpoint, as is the case in a “mixed” difference of opinion. It can also be that the other merely has doubt concerning the acceptability of one’s standpoint. A presumption of doubt is already enough reason for advancing argumentation. See van Eemeren et al. (2002a, Chap. 1).

²⁰ If there are more standpoints at issue, a participant in the discussion can take on the role of protagonist for some standpoints and the role of antagonist for other standpoints, so that the various standpoints may have different protagonists. Having the role of antagonist may (but need not) coincide with taking on the role of protagonist of another – contrary – standpoint. See for these distinctions van Eemeren and Grootendorst (1992a, pp. 13–25).

which their exchange of views will be based. If there is no such opening for an exchange of views, having a critical discussion is impossible. It only makes sense to undertake an attempt to resolve a difference of opinion by means of argumentation if some shared point of departure can be established.²¹

In the *argumentation stage* the protagonist defends the standpoints at issue methodically against the critical responses of the antagonist. If the antagonist is not yet wholly convinced of the protagonist's argumentation, further argumentation from the protagonist is elicited by means of a critical reaction of the antagonist; the protagonist will respond by means of further argumentation if the antagonist remains critical; and so on. As a consequence, the structure of the protagonist's argumentation can vary from very simple to extremely complex.²² The argumentation stage manifests itself in argumentative discourse in those parts of the discourse in which one party advances arguments to overcome the other party's doubts about standpoints or counterarguments, and the other party reacts critically. Whether this is done explicitly or implicitly, advancing argumentation and judging its quality is crucial to resolving a difference of opinion on the merits. If there is no argumentation and no critical appraisal of this argumentation, there is no critical discussion and the difference of opinion will remain unresolved. Because of its crucial role in the resolution process, the argumentation stage is sometimes identified with a critical discussion, but for resolving a difference of opinion on the merits, the other stages are equally indispensable.

In the *concluding stage*, the protagonist and the antagonist determine whether the protagonist's standpoints have been successfully defended against the critical responses of the antagonist. If the protagonist's standpoints have to be withdrawn, the difference of opinion is resolved in favor of the antagonist; if the antagonist's doubts have to be retracted, it is resolved in favor of the protagonist. As long as the parties do not draw any conclusion about the result of their attempt to resolve a difference of opinion, no real completion of the critical discussion has been reached. In argumentative discourse, the concluding stage corresponds with those parts of the discourse in which the parties summarize the results of their attempt to resolve a difference of opinion.

After the concluding stage has been completed, the particular critical discussion of the standpoints at issue that was going on is over. This does not mean however that the same participants cannot embark upon another critical discussion – by themselves or together with others. A successful completion of a critical discussion does not preclude that the same parties again start a new critical discussion. That new critical discussion may concern a completely different difference of opinion, but it may also

²¹ For an argumentative exchange in which this precondition has clearly not been fulfilled, see van Eemeren et al. (1993, pp. 142–169).

²² The different types of complex argumentation that can come into being vary from *multiple* argumentation to argumentation that is *coordinatively compound* or *subordinatively compound* and combinations of them. See for the different kinds of argumentation structure van Eemeren and Grootendorst (1992a, pp. 73–89) and Snoeck Henkemans (1992).

pertain to a slightly altered version of the same difference, with the discussion roles of the participants remaining the same – or perhaps with a different division of discussion roles. In any event, the new critical discussion must go through the same discussion stages again – from confrontation stage to concluding stage.

Which speech acts can, in the various stages of a critical discussion, contribute to resolving a difference of opinion on the merits? To answer this question, it is useful to start from the classification distinguishing five basic types of speech acts developed by John Searle (1979, pp. 1–29). It is important to note in advance that in argumentative practice a great many speech acts in the discourse are performed implicitly or indirectly, so that in argumentative discourse other types of speech acts may fulfill the functions which are in explicit cases fulfilled by the speech acts mentioned below.

A first type of speech acts consists of the so-called *assertives*. The prototype is the act of “asserting,” by which the speaker or writer claims the truth of a proposition: “I assert that Chamberlain and Roosevelt never met.” Other assertives are, for instance, “claiming,” “stating,” “assuring,” “supposing,” “opining,” “denying,” and “conceding.” The commitment to a proposition expressed in an assertive may vary from very strong, as is the case in an assertion or statement, to fairly weak, as in the case of a supposition. Assertives do not necessarily involve a claim to truth but may also relate to the acceptability of propositions in a more general sense, as when the correctness or justness of an evaluative opinion concerning a certain state of affairs or event is at issue (“Baudelaire is the best French poet”). In principle, in a critical discussion, all kinds of assertives can occur. They can express standpoints, convey argumentation in defense of a standpoint, and can be used to establish a conclusion. In establishing a conclusion, it can emerge that a standpoint can be upheld (“I therefore maintain my standpoint”), but it may also be necessary to retract a standpoint (“Therefore I do not maintain this standpoint anymore”). In both cases the speech act concerned can be viewed as an assertive.

A second type of speech act consists of *directives*. The prototype is the act of “ordering,” which requires a special position of the speaker or writer vis-à-vis the listener or reader. “Come to my room,” for example, can be an order only if the speaker who expresses himself or herself like this is in a position of authority with regard to the addressee – otherwise it is a request or an invitation. A question can be viewed as a special form of request, because it is a request for a verbal act: the answer. Other examples of directives are “challenging,” “recommending,” “begging,” and “forbidding.” Not all directives play a part in a critical discussion. Their role consists in (1) requesting a party to clarify a move that this party has made; (2) challenging, in the opening stage, the party that has advanced a standpoint to defend this standpoint; or (3) requesting, in the argumentation stage, a party that has agreed to defend a standpoint to provide argumentation in support of the standpoint. Prohibitions and unilateral orders are not part of a critical discussion. Nor can a party that has advanced a standpoint be challenged to do anything else than give argumentation for the standpoint – a challenge to start a fight, for example, is out.

A third type of speech acts, *commissives*, are speech acts by means of which the speaker or writer undertakes a commitment vis-à-vis the listener or reader to do

something or refrain from doing something. The prototype of a commissive is the act of “promising,” by which the speaker or writer explicitly undertakes to do or not to do something: “I promise you I won’t tell your father.” Other commissives are, for instance, “accepting,” “rejecting,” “undertaking,” and “agreeing.” With a commissive the speaker or writer may also take on a commitment about which the listener or reader is less enthusiastic: “I promise you that if you walk out of here now you will never set foot in this house again.”²³ In a critical discussion, commissives fulfill various roles: accepting or not accepting a standpoint, accepting or not accepting argumentation, accepting the challenge to defend a standpoint, jointly deciding to start a discussion, agreeing to take on the discussion role of protagonist or antagonist, agreeing on the discussion rules, and, if relevant, jointly deciding to start another discussion. Some of these commissives, such as agreeing on the discussion rules, can only be performed in cooperation with the other party.

A fourth type of speech acts, *expressives*, consists of speech acts by means of which speakers or writers express the way they feel about something, as in uttering disappointment, thanking someone, and so on. There is no single prototypical expressive. Highly conventionalized examples of expressives are “Congratulations!” and “Thanks very much.” Besides “congratulating” and “thanking,” other expressives include “commiserating,” “regretting,” “condoling,” and “greeting.” Although they often leave room for other functions as well, expressives primarily convey certain feelings. Joy, for example, is expressed in “I’m glad to see you’re quite well again,” irritation resounds in “I’m fed up with your hanging about all day,” and envy is echoed by “I wish I had such a nice girl friend.” In a critical discussion, expressives do not play a constitutive role. This does not mean that they cannot affect the course of the resolution process indirectly.²⁴

A fifth type of speech acts, *declaratives* (Searle speaks of *declarations*), consists of speech acts by means of which the speaker or writer calls a particular state of affairs into being. If, for example, an employer addresses one of the employees with the words “You are fired,” then the employer is not just describing a state of affairs but actually makes the words a reality. Declaratives are usually bound to a specific institutionalized context in which particular people are qualified to perform certain declaratives. “I open the meeting,” for instance, only works if the “I” is the chair of the meeting. A special subtype is that of the so-called *usage declaratives*, which regulate linguistic usage.²⁵ Their main purpose is to facilitate or to increase the

²³ In spite of the use of the expression “I promise,” in this case the speech act performed amounts to a threat rather than a promise.

²⁴ Like other indirect speech acts, expressives sometimes need to be reconstructed as standpoints or arguments. Even if they are just expressives they may be of influence by distracting attention from the discussion, as when a participant sighs to make clear that the discussion depresses her.

²⁵ The subcategory of the usage declaratives is introduced in van Eemeren and Grootendorst (1984, pp. 109–110).

I	CONFRONTATION STAGE
ASSERTIVE	Expressing a standpoint
COMMISSIVE	Acceptance or non-acceptance of a standpoint, upholding non-acceptance of a standpoint
[DIRECTIVE	Requesting a usage declarative]
[USAGE DECLARATIVE	Definition, specification, amplification, etc.]
II	OPENING STAGE
DIRECTIVE	Challenging to defend a standpoint
COMMISSIVE	Acceptance of the challenge to defend a standpoint Agreement on premises and discussion rules Decision to start a discussion
[DIRECTIVE	Requesting a usage declarative]
[USAGE DECLARATIVE	Definition, specification, amplification, etc.]
III	ARGUMENTATION STAGE
DIRECTIVE	Requesting argumentation
ASSERTIVE	Advancing argumentation
COMMISSIVE	Acceptance or non-acceptance of argumentation
[DIRECTIVE	Requesting a usage declarative]
[USAGE DECLARATIVE	Definition, specification, amplification, etc.]
IV	CONCLUDING STAGE
COMMISSIVE	Acceptance or non-acceptance of a standpoint
ASSERTIVE	Upholding or retracting a standpoint Establishing the result of the discussion
[DIRECTIVE	Requesting a usage declarative]
[USAGE DECLARATIVE	Definition, specification, amplification, etc.]

Fig. 10.1 Distribution of speech acts in a critical discussion

listener's or reader's understanding of other speech acts by clarifying how these speech acts are to be interpreted. Examples of usage declaratives are "definitions," "precizations," "explications," and "amplifications." Usage declaratives do not require any kind of institutional relationship between the participants. In a critical discussion, they may be performed (and requested) at any stage. At the confrontation stage, for instance, they may be of help in unmasking a spurious dispute, at the opening stage in removing uncertainty regarding the discussion rules, at the argumentation stage in preventing premature acceptance or nonacceptance, and so on.²⁶ With the exception of the usage declaratives, declaratives do not play a role in the resolution of a difference of opinion on the merits.²⁷

The speech acts that play a constitutive role in a critical discussion are listed in Fig. 10.1.

²⁶ Viskil (1994, in Dutch) develops theoretical guidelines for the pragma-dialectical framing of definitions.

²⁷ Due to their dependence on the authority of the speaker or writer in a certain institutional context, declaratives can sometimes lead to a settlement (but not a resolution) of a dispute, as when a judge pronounces a verdict.

10.5 Analysis as Reconstruction

For various reasons,²⁸ argumentative reality is as a rule not fully in agreement with the ideal model of a critical discussion.²⁹ At times, it may even seem to deviate completely from the model. According to the model, for example, antagonists doubting the acceptability of a standpoint must state their doubts clearly and unambiguously in the confrontation stage of the discussion, but in reality doing so can be “face-threatening” to both parties so that antagonists may prefer to operate more circumspectly. Because they are considered self-evident and sometimes for less honorable reasons, certain indispensable elements of the resolution process are often left unexpressed, including the definition of the difference of opinion, the establishment of discussion roles, the procedural and material starting points, the relations between the different arguments put forward in defense of a standpoint, and the way in which the various premises are supposed to support the standpoint. These elements are usually concealed in the discourse and need to be recovered by a reconstructive analysis (van Eemeren et al. 1993).³⁰

The reconstruction of argumentative discourse that takes place in a pragma-dialectical analysis starts from the idea that resolving a difference of opinion on the merits requires going through the four discussion stages distinguished analytically in the model of a critical discussion and performing the relevant kinds of speech acts.³¹ In the reconstruction the model of a critical discussion therefore serves as a

²⁸ See for an explanation of these reasons van Eemeren (2010, p. 13).

²⁹ From the observations that often the parties fail to identify what exactly their difference of opinion involves, that it is not always immediately clear who is to be convinced of the acceptability of the standpoints at issue, that the division of the discussion roles and the procedural and material starting points are as a rule only mentioned when they are not regarded as understood, that argumentation remains standardly partly unexpressed and criticisms implicit, and that conclusions are often just suggested, it can be concluded neither that the discourse is deficient nor that the model of critical discussion is not realistic. The former is contradicted by pragmatic insight concerning the conduct of ordinary discourse and the latter by dialectical insight concerning the process of resolving a difference of opinion on the merits (van Eemeren and Grootendorst 1984, Chap. 4; 1992a, Chap. 5; van Eemeren et al. 1993, Chap. 3).

³⁰ An argumentative discourse in which a standpoint is defended by means of a monologue is in pragma-dialectics viewed as an implicit discussion in which only one of the parties participates explicitly. Because such a discourse is also aimed at convincing potential critics, even though they may not be actually present, their views need to be taken into account, however implicit these views may be. Just like in explicit discussions, parties putting forward their case cannot just present their argumentation but need to cover in some way or the other the other discussion stages as well. A practical complication of analyzing implicit discussions is that the discussion stages are usually harder to identify.

³¹ The first question in reconstructing an oral or written discourse always is whether the discourse is indeed wholly or partly argumentative. Although in some cases the discourse is evidently not argumentative, more often than not a discourse that is not presented as argumentative all the same has an argumentative function. The demarcation criterion is whether the discourse is, directly or indirectly, aimed at overcoming the addressee’s doubts regarding the acceptability of a standpoint.

heuristic and analytic tool. It constitutes a “template” (van Eemeren et al. 2007, p. 17) that provides a point of reference for the analysis and ensures that the discourse is interpreted in terms of argumentative moves relevant to resolving a difference of opinion on the merits. This means that a theoretical perspective is adopted in the analysis that leads to a reconstruction resulting in an analytic overview which highlights those, and only those, elements in the discourse that are pertinent to a critical evaluation. Because these elements are in argumentative reality generally not fully and explicitly represented in the discourse, let alone in the required order, and may be hidden among a great many non-argumentative elements, they need to be systematically identified in the reconstruction and included in the analytic overview.³²

A pragma-dialectical reconstruction of argumentative discourse entails a number of specific analytic operations, known as *reconstruction transformations*, which are instrumental in identifying the elements in the discourse that can play a part in resolving a difference of opinion on the merits and in dealing with them in an appropriate way. Each of the transformations represents a particular way of reconstructing some part of the discourse in terms of a critical discussion.³³ Depending on the kind of analytic operation involved in a transformation, four types of transformation can be distinguished: “deletion,” “addition,” “permutation,” and “substitution.”³⁴ As a consequence of the fact that these transformations have been carried out, the reconstruction of the discourse resulting from the analysis may differ in several respects – and in some cases even considerably – from the discourse as it was presented.

The transformation of *deletion* amounts to identifying in the analysis and leaving subsequently out of consideration all elements in the discourse that do not play a part in resolving a difference of opinion on the merits, such as sidelines devoted to other topics, irrelevant interruptions, and mere repetitions of the same message. The transformation of *addition* involves a completion process consisting in supplementing the discourse as it is presented with those elements which are left implicit but are immediately relevant to resolving a difference of opinion on the merits, such as presupposed or only elliptically phrased starting points and unexpressed premises and conclusions. The transformation of *permutation* entails rearranging elements as they appear in the discourse, making them in the analytic overview appear in the order that best reflects the process of resolving a difference

³² As explained in van Eemeren (2010, pp. 16–19), the analytic overview resulting from the analysis needs to satisfy requirements of economy, efficacy, coherence, realism, and well-foundedness.

³³ The transformations are aimed at reconstructing the way in which the various parts of the discourse contribute to resolving a difference of opinion on the merits, which does not necessarily always correspond with the way in which they are viewed by the participants.

³⁴ For a more elaborate account of the transformations executed in a pragma-dialectical reconstruction of argumentative discourse, see van Eemeren and Grootendorst (1990); van Eemeren et al. (1993, pp. 61–86); and van Eemeren and Grootendorst (2004, pp. 100–110).

of opinion on the merits, so that elements belonging to a certain discussion stage which appear at a different point in the discourse (earlier or later) are readjusted and overlaps between different discussion stages are redressed. The transformation of *substitution* amounts to reformulating in the analysis in unequivocal and clear paraphrases those standpoints and other crucial elements in the discourse whose function in the resolution process would otherwise be unnecessarily opaque due to ambiguous or vague formulations.

In a pragma-dialectical reconstruction of an actual discourse, these four kinds of transformations are in principle carried out recursively in a cyclic process, because the results achieved by the completion of certain transformations may require and justify the execution of still other transformations. When reconstructing a nonassertive speech act as an indirect standpoint, for instance, the reconstruction of this speech act as an indirect assertive by means of a substitution transformation may have to be followed by a transformation of addition in order to attribute the communicative function of a standpoint to this indirect assertive.

To be able to go beyond a naïve reading of argumentative discourse and give a sound evaluation, the analytic overview resulting from the reconstruction of the discourse should contain all elements, and only those elements, that are relevant to the resolution of a difference of opinion on the merits. This means that the analytic overview has to cover all discussion stages. It needs to recapitulate the difference of opinion at issue; to identify the positions of the participants and the procedural and material premises that serve as the starting points of the discussion; to survey the arguments and criticisms advanced by the parties, indicating the types of arguments that are used and the argumentation structures that have developed; and to report what, according to the participants, the outcome of the discussion is. This means that in the analytic overview the following points need to be attended to³⁵:

1. The standpoints at issue in the difference of opinion
2. The positions adopted by the parties and the procedural and material starting points
3. The arguments that have been explicitly or implicitly advanced by the parties for each standpoint
4. The argumentation structure of the whole of arguments advanced in defense of a standpoint
5. The argument schemes used to justify a standpoint in each of the individual arguments that together constitute the argumentation
6. The outcome of the discussion claimed by the parties.

³⁵ All crucial concepts mentioned in [Sect. 1.3](#) are represented in the analytic overview, except for the concept of fallacies, which plays a part in the evaluation of argumentative discourse. See [Sect. 10.7](#).

These six points are all pertinent to the evaluation of argumentative discourse.³⁶ If it is unclear what the difference of opinion is, there is no way of telling whether it has been resolved. If it is not known which positions the parties have adopted, it is impossible to tell in whose favor the discussion has ended. If not all arguments are taken into account, crucial parts of the argumentation may be overlooked so that the evaluation is inadequate. If the structure of argumentation in defense of a standpoint is not exposed, it cannot be judged whether the arguments put forward in defense of the standpoint constitute a coherent whole. If the argument schemes employed in supporting the standpoints and sub-standpoints are not identified, it cannot be determined whether the links between the premises and the standpoints are equal to criticism. And if the participants' views of the outcome are not taken into account, it cannot be told whether the evaluator's judgment agrees with that of the participants.

The terms and concepts pertinent to in the various components of an analytic overview, such as *argumentation structure* and *argument scheme*, are used in the way in which they are defined and treated in the pragma-dialectical theory.³⁷ In reconstructing the difference of opinion that lies at the heart of the argumentative discourse, for instance, a distinction is made between *single nonmixed*, *multiple nonmixed*, *single mixed*, and *multiple mixed* differences of opinion and their various kinds of combinations. In reconstructing the positions taken by the participants, a distinction is made between those who act as a *protagonist* of a standpoint and those who take on the role of an *antagonist*. In reconstructing the arguments, explicit premises are distinguished from premises which are only implicitly or even indirectly expressed in the discourse. In reconstructing *unexpressed premises*, a differentiation is made between the *logical minimum* and the *pragmatic optimum*. The logical minimum consists of the *associated conditional* expressed in the statement "if explicit premise, then conclusion," and the pragmatic optimum involves a generalization or specification of the associated conditional going as far as the context, the available background information, and other relevant pragmatic considerations allow.³⁸ In reconstructing the argumentation structure, *multiple*, *coordinative*, and *subordinative* argumentation structures are associated with the

³⁶ Starting from an analytic overview (or a writing plan similar to an analytic overview), in pragma-dialectics also a method has been developed for writing and rewriting argumentative texts in such a way that their comprehensibility and acceptability are not diminished by redundancy, implicitness, disarrangement, or lack of clarity (van Eemeren and Grootendorst 1999). In this method, four presentational transformations are applied to the analytic overview (or writing plan) that roughly "mirror" the reconstruction transformations: presentational deletion (what can be left out?), presentational addition (what should be added?), presentational permutation (which rearrangements are to be made?), and presentational substitution (which rephrasings are necessary?).

³⁷ For an explanation of these terms and concepts, see van Eemeren and Grootendorst (1992a) and van Eemeren et al. (2002a), a textbook based on to the pragma-dialectical method of analyzing, evaluating, and producing argumentative discourse.

³⁸ For the pragma-dialectical reconstruction of unexpressed premises, see van Eemeren and Grootendorst (1992a, pp. 60–72). See also Gerlofs (2009).

different kinds of critical reactions the arguer anticipates or responds to.³⁹ The argument schemes that are distinguished depend on the different kinds of critical questions that are in the pragma-dialectical view associated with establishing *causal*, *symptomatic*, or *comparison* relationships between arguments and standpoints.⁴⁰

In explaining the pragma-dialectical method of reconstructive analysis, van Eemeren et al. (1993) emphasize in *Reconstructing Argumentative Discourse* that a reconstruction should be faithful in every respect to the commitments that may be ascribed to the participants in the discourse on the basis of their contributions. The transformations that are carried out in the reconstruction must be accounted for by a sound combination of pragmatic insight and empirical data. In order to neither “over-interpret” nor “under-interpret” the discourse, the analyst must be sensitive to the meaning of the details of the presentation in the communicative context in which it takes place.

Among the analytic tools developed in pragma-dialectics to reconstruct argumentative discourse in terms of the model of a critical discussion are the *rules of communication* (van Eemeren and Grootendorst 1992a, pp. 49–52). These rules are based on an integration of an amended version of the Searlean felicity conditions for the performance of speech acts in communication and an amended version of the Gricean maxims for the conduct of verbal interaction: Do not perform any speech acts which are (1) incomprehensible, (2) insincere (in the sense of not creating a commitment), (3) redundant, (4) pointless, or (5) not appropriate in the context in which they occur in a specific speech event.

In cases in which it may be assumed that the *general principles of communication and interaction* are not abandoned, the analyst is to make an effort – just like ordinary listeners or readers do – to reconstruct implicit speech acts in which these rules seem to be violated in such a way that the violation is remedied and the reconstructed speech act agrees with all the rules of communication. Following this procedure, indirect speech acts and unexpressed premises, which violate the rules of communication when the utterances by which they are conveyed are interpreted literally, can be reconstructed (van Eemeren and Grootendorst 1992a, pp. 52–59, pp. 60–72).

In accounting for the reconstruction not only the presentational form of the argumentative moves needs to be taken into consideration but also the linguistic *micro*-context, the situational *meso*-context, the institutional *macro*-context, and the intertextual *discursive* context in which these moves are made (van Eemeren 2010, pp. 16–19). In justifying a preference for one reconstruction rather than another one, logical inferences pointing to relevant presuppositions or implications

³⁹ For a more elaborate discussion of the pragma-dialectical argumentation structures, see van Eemeren and Grootendorst (1992a, pp. 73–89) and Snoeck Henkemans (1992).

⁴⁰ For a more elaborate discussion of the pragma-dialectical argument schemes, see van Eemeren and Grootendorst (1992a, pp. 94–102). See also Garssen (1997, in Dutch).

of what is said in the discourse and pragmatic inferences pointing to relevant “implicatures” are also pertinent. The same goes for relevant background information – which may be general or only available to specific insiders.

10.6 Rules for Critical Discussion

The critical norms of reasonableness authorizing the performance of speech acts in the various stages of resolving a difference of opinion on the merits are in the pragma-dialectical theory of argumentation depicted as rules for critical discussion. In a critical discussion, the protagonists and the antagonists of the standpoints at issue not only have to go through all four stages of the resolution process, but they must also observe these rules in all stages. The rules for critical discussion proposed by van Eemeren and Grootendorst (1984) in *Speech Acts in Argumentative Discussions* range from the confrontation stage to the concluding stage, covering all the norms that are pertinent to resolving a difference of opinion on the merits. Together they constitute a dialectical procedure for the performance of speech acts in a critical discussion.

Of the 15 rules included in the pragma-dialectical procedure described in *A Systematic Theory of Argumentation* (van Eemeren and Grootendorst 2004), which represents the latest version of the rules for critical discussion, we cite only rules 7, 8, and 9, because they capture the crucial evaluation procedures (pp. 147–151).⁴¹

RULE 7

- (a) The protagonist has successfully defended the propositional content of a complex speech act of argumentation against an attack by the antagonist if the application of the intersubjective identification procedure⁴² yields a positive result or if the propositional content is in the second instance accepted by both parties as a result of a sub-discussion in which the protagonist has successfully defended a positive sub-standpoint with regard to this propositional content.
- (b) The antagonist has successfully attacked the propositional content of the complex speech act of argumentation if the application of the intersubjective identification procedure yields a negative result and the protagonist has not successfully defended a positive sub-standpoint with regard to this propositional content in a sub-discussion.

RULE 8

- (a) The protagonist has successfully defended a complex speech act of argumentation against an attack by the antagonist with regard to its force of justification or refutation if the application of the intersubjective inference procedure or

⁴¹ A full explanation of the pragma-dialectical rules for critical discussion can be found in van Eemeren and Grootendorst (2004, pp. 123–157).

⁴² This procedure, and other procedures mentioned in the rules, will be explained below.

(after application of the intersubjective explicitization procedure) the application of the intersubjective testing procedure yields a positive result.

- (b) The antagonist has successfully attacked the force of justification or refutation of the argumentation if the application of the intersubjective inference procedure or (after application of the intersubjective explicitization procedure) the application of the intersubjective testing procedure yields a negative result.

RULE 9

- (a) The protagonist has conclusively defended an initial standpoint or sub-standpoint by means of a complex speech act of argumentation if he has successfully defended both the propositional content called into question by the antagonist and its force of justification or refutation called into question by the antagonist.
- (b) The antagonist has conclusively attacked the standpoint of the protagonist if he has successfully attacked either the propositional content or the force of justification or refutation of the complex speech act of argumentation.

The method referred to in rule 7 as *identification procedure* involves determining whether a proposition that has been called into question is identical to any of the propositions in the list of propositions which may be regarded accepted by both parties (van Eemeren and Grootendorst 2004, pp. 145–146). If a proposition is included in the list of propositions accepted as point of departure at the opening stage, this proposition may not be called into question during the discussion. If some part of the propositional content of argumentation is called into question by the antagonist and the protagonist can rightly point out that the proposition that is criticized is part of the list of accepted starting points, the antagonist is obliged to retract his objection to the proposition. The protagonist's defense against the antagonist's attack has then been successful.

To allow for new information to be used in a critical discussion, the parties have to agree at the opening stage on how they will determine whether a proposition containing new information is to be accepted. They may agree on consulting oral or written sources (encyclopedias, dictionaries, reference works) or on going by certain (experimental or other) methods for checking the accuracy of the information. At the opening stage, the discussants can also decide to allow for a "sub-discussion" to be conducted in which it is determined whether a proposition on which agreement was first lacking can be accepted in the second instance. Then the protagonist will have to take a positive *sub*-standpoint with regard to this proposition and defend it in a sub-discussion with the same premises and discussion rules against the antagonist's criticisms.

The *inference procedure* referred to in rule 8 does not pertain to the propositional content of argumentation but to its justifying or refuting force (van Eemeren and Grootendorst 2004, p. 148). The procedure amounts to determining in cases in which the reasoning is fully externalized whether the protagonist's logical inferences are acceptable. It is aimed at checking whether the reasoning "propositional content of the argumentation, therefore proposition to which the standpoint refers" (or "*not* proposition" in case of a negative standpoint), is valid as it stands.

If the reasoning is *not* completely externalized in the argumentation and cannot be considered valid as it stands, the question is whether the argumentation is based on an argument scheme that both parties consider admissible and that has been correctly applied. To reconstruct the argument scheme that is employed, the *explicitization procedure* needs to be carried out (van Eemeren and Grootendorst 2004, pp. 148–149). Once the argument scheme has been reconstructed, it must be determined whether the use of this particular argument scheme is indeed admissible and whether it has been applied correctly. The procedure for doing so is known as the *testing procedure* because it involves carrying out certain critical tests appropriate to the argument scheme concerned (van Eemeren and Grootendorst 2004, pp. 149–150).

By virtue of rule 9, it can be indicated whether, in view of the results of the application of rules 7 and 8, the protagonist has conclusively defended an initial standpoint or a sub-standpoint by means of argumentation and whether the antagonist has conclusively attacked a standpoint. For a conclusive defense, the protagonist must have successfully defended the propositional content of the argumentation in accordance with rule 7 and the justifying or refuting force of the argumentation regarding the standpoint in accordance with rule 8. For a conclusive attack, the antagonist must have successfully attacked *either* the propositional content of the argumentation *or* its justifying or refuting force in accordance with rules 7 and 8. The antagonist may try to do both, but – as is laid down in rule 9 – for a conclusive attack on the standpoint it is sufficient that one of the two attempts succeeds.

Based on the critical insights expressed in the pragma-dialectical procedure for conducting a critical discussion, van Eemeren and Grootendorst (1992a) have developed in *Argumentation, Communication, and Fallacies* a practical *code of conduct* for people who want to resolve their differences of opinion in a reasonable way by means of argumentative discourse.⁴³ The simplified, nontechnical version of the rules for critical discussion provided in this code of conduct consists of ten basic principles which need to be maintained if argumentative discourse is to be a suitable means for resolving a difference of opinion on the merits. Because all 10 basic principles are formulated in terms of prohibitions, the rules of the code of conduct are often profanely referred to as “the Ten Commandments” (van Eemeren and Grootendorst 2004, pp. 190–196).⁴⁴

⁴³ The formulation of the code of conduct used in this section is based on its latest version in van Eemeren and Grootendorst (2004, pp. 190–196).

⁴⁴ It is worth noting that observance of these commandments can only be imposed on discussants as a requirement of reasonable acting if the *higher-order conditions* for conducting a critical discussion have been fulfilled, so that critical reasonableness can be fully realized. If the rules for critical discussion are viewed as the (first order) “rules of the game,” the higher-order conditions represent the various kinds of psychological, sociopolitical, and other preconditions stating the dispositions and attitudes of the discussants and the circumstances of the discussion that are required. The “internal” conditions relating to the state of mind of the discussants are called *second-order* conditions and the “external” conditions relating to the discussion situation *third-order* conditions. For the distinction between these higher-order conditions, see van Eemeren et al. (1993, pp. 30–35) and van Eemeren and Grootendorst (2004, pp. 36–37).

A difference of opinion cannot be resolved if it is, to begin with, not clear to the parties involved that there is a difference of opinion and what the difference involves. In a critical discussion, the parties must therefore have ample opportunity to make their positions known. Advancing standpoints and doubting standpoints need to be considered as basic rights at the confrontation stage of a critical discussion. The first rule of the code of conduct, called the *Freedom Rule*, is designed to ensure that standpoints and doubt regarding standpoints can be freely advanced: *Discussants may not prevent each other from advancing standpoints or from calling standpoints into question.*

A critical discussion remains stuck, and the difference of opinion cannot be resolved, if the party who has advanced a standpoint is not prepared to take on the role of protagonist of this standpoint. In order to prevent a critical discussion from foundering, it is therefore vital that discussants who have advanced a standpoint automatically acknowledge at the opening stage an obligation to defend this standpoint if they are challenged to do so. The second rule of the code of conduct, the *Obligation to Defend Rule*, is designed to ensure that standpoints that are put forward and called into question are defended against critical attacks: *Discussants who advance a standpoint may not refuse to defend this standpoint when requested to do so.*

A difference of opinion can neither be resolved if the standpoint at issue is distorted by the antagonist or the protagonist. This happens if the antagonist attacks a standpoint that is different from the standpoint advanced by the protagonist or if the protagonist defends a standpoint that is different from the standpoint the protagonist has advanced earlier. In a critical discussion, it needs to be ensured that the attacks and defenses that take place at the argumentation stage relate correctly to the standpoint advanced by the protagonist. The third rule of the code of conduct, the *Standpoint Rule*, is designed to serve this purpose with respect to attacks: *Attacks on standpoints may not bear on a standpoint that has not actually been put forward by the other party.*

A difference of opinion cannot be truly resolved if the defense of the standpoint at issue is not based on argumentation, but merely on *ethos* or *pathos*,⁴⁵ and – as pointed out above – neither can it be resolved if the argumentation that is advanced by the protagonist does not support the standpoint that is defended. In order to resolve a difference of opinion on the merits, in a critical discussion, the defense of standpoints must always take place by means of argumentation, and this argumentation must be relevant to the standpoint at issue. Rule 4 of the code of conduct, the *Relevance Rule*, is intended to serve this purpose: *Standpoints may not be defended by non-argumentation or argumentation that is not relevant to the standpoint.*

A difference of opinion cannot be resolved on the merits if the protagonist withdraws from the obligation to defend an unexpressed premise by evading responsibility for it or if the antagonist misrepresents an unexpressed premise by

⁴⁵ Advancing argumentation, i.e., the use of *logos*, may be combined with the use of *ethos* or *pathos* but should not be replaced by it. For the role of “ethical” (also called “ethotic”) and “pathetical” means of persuasion in classical rhetoric, in particular in Aristotle’s rhetoric, see Sect. 2.8, subsection The modes of persuasion, of this volume, and Kennedy (1994).

exaggerating the scope of the premise that has been left unexpressed. In a critical discussion, protagonists must accept responsibility for all elements left implicit in their argumentation, and antagonists have to stick to the responsibility that can be assigned to the protagonist on the basis of a careful reconstruction of what is concealed. Rule 5 of the code of conduct, the *Unexpressed Premise Rule*, ensures that implicit elements in the argumentation are treated seriously by both parties: *Discussants may not falsely attribute unexpressed premises to the other party, nor disown responsibility for their own unexpressed premises.*

In order to resolve a difference of opinion on the merits, in defending standpoints by means of argumentation and in attacking the argumentation, the starting points of the discussion must be used in a proper way. Nothing may be treated as an accepted starting point if in fact it is not, and no accepted starting point may be denied. Otherwise it becomes impossible for a protagonist to defend a standpoint conclusively and for an antagonist to attack a standpoint successfully starting from the commitments the parties have accepted. Rule 6 of the code of conduct, the *Starting Point Rule*, is aimed at ensuring that the starting points agreed upon in the opening stage are used properly in the argumentation stage: *Discussants may not falsely present something as an accepted starting point or falsely deny that something is an accepted starting point.*

If the reasoning underlying the argumentation that is advanced in defense of a standpoint is invalid in a logical sense,⁴⁶ the difference of opinion cannot be resolved on the merits. All reasoning in a critical discussion that is presented as being fully explicit, and hence as logically valid by itself, therefore needs to be checked for its logical validity. If the reasoning underlying the argumentation is not presented as fully explicit, it does not make sense to carry out such a check, because when taken literally the reasoning as it is presented will then presumably be logically invalid (though it could be valid “by accident”). Rule 7 of the code of conduct, the *Validity Rule*, expresses the need to check in cases where this makes sense whether the conclusion that is drawn follows indeed logically from the premises: *Reasoning that is in an argumentation explicitly and fully expressed may not be invalid in a logical sense.*⁴⁷

A difference of opinion can only be resolved on the merits if it can be decided when a standpoint has been defended conclusively by means of argumentation or when it has been conclusively criticized. In order to be able to judge this, there must be commonly agreed methods for testing the soundness of those parts of the argumentation which are not part of the common starting points and cannot be judged for their logical validity. These methods should make it possible to determine whether in the cases concerned the argument schemes employed in the

⁴⁶ When exactly a piece of reasoning is to be considered invalid in a logical sense is dependent on the logical theory that is used as the standard of validity. This standard needs to be agreed upon (explicitly or implicitly) in the opening stage (van Eemeren and Grootendorst 1984, p. 163; 2004, p. 148).

⁴⁷ We prefer this phrasing to the one used in van Eemeren and Grootendorst (2004), “reasoning that [...] is presented as formally conclusive” (p. 193), because it is easier to understand.

argumentation are indeed admissible in light of what has been agreed upon in the opening stage and whether they have been applied correctly in the argumentation stage. By excluding improper uses of argument schemes, Rule 8 of the code of conduct, the *Argument Scheme Rule*, is designed to ensure that standpoints can be conclusively defended by the use of argument schemes: *Standpoints defended by argumentation that is not explicitly and fully expressed may not be regarded as conclusively defended by such argumentation unless the defense takes place by means of appropriate argument schemes that are applied correctly.*⁴⁸

A difference of opinion is resolved only if the parties agree at the concluding stage on whether or not the attempts that have been made to defend the standpoints at issue are successful and conclusive. A critical discussion that apparently developed smoothly may still fail if the protagonist wrongly claims at the concluding stage that a standpoint has been successfully defended or even that it is proven true or if the antagonist wrongly denies that the defense was successful or even that the opposite standpoint has now been proven. Rule 9 of the code of conduct, known as the *Concluding Rule*, is designed to ensure that the protagonist and the antagonist ascertain in a correct manner what the result of the discussion is: *Inconclusive defenses of standpoints may not lead to maintaining these standpoints and conclusive defenses of standpoints may not lead to maintaining expressions of doubt concerning these standpoints.*

A difference of opinion can only be resolved on the merits if all participants in the discussion make a real effort to express their intentions and to interpret the others' intentions as accurately as possible, so that the chances of misunderstanding are minimized. Otherwise problems of formulation or interpretation may lead to the generation of a pseudo-difference at the confrontation stage or a pseudo-solution at the concluding stage – whether the misunderstanding is created deliberately or not. In ordinary language use, absolute clarity is impossible, and problems of formulation and interpretation are not linked to any particular discussion stage but may arise at all stages of a critical discussion. Rule 10, the *Language Use Rule*, is aimed at preventing misunderstandings resulting from nontransparent, vague, or equivocal formulations and inaccurate, sloppy, or biased interpretations: *Discussants may not use any formulations that are insufficiently clear or confusingly ambiguous, and they may not deliberately misinterpret the other party's formulations.*

10.7 Fallacies as Violations of Rules for Critical Discussion

Traditionally, argumentative moves that are in some way seriously flawed are called *fallacies*. Taking the practical orientation of argumentation theory as a discipline into account, the possibility of nailing down the fallacies can ultimately be seen as the litmus test for the quality of any particular (normative) theory of

⁴⁸ This phrasing is clearer than the more complicated one in van Eemeren and Grootendorst (2004, p. 194).

argumentation (van Eemeren 2010, p. 187). Since a theory of errors cannot be formulated independently of a theory about what is to be viewed as correct,⁴⁹ van Eemeren and Grootendorst (1984, 1992a) incorporated their treatment of the fallacies from the start in their theory of argumentation. The discussion rules they proposed in their pragma-dialectical theory of argumentation represent the standards or general soundness norms for critical discussion.

According to the pragma-dialectical approach, the performance of any speech act constituting an argumentative move that is an infringement of any of the rules for critical discussion is to be viewed as a fallacy, whichever party performs it and at whatever stage of the discussion. The rationale for calling an argumentative move a *fallacy* is then that this move obstructs or hinders the resolution of a difference of opinion on the merits. The fact that the rules for critical discussion of the code of conduct are instrumental in preventing such counterproductive argumentative moves from being regarded acceptable demonstrates their suitability as instruments for resolving differences of opinion on the merits, i.e., their “problem-solving validity.”⁵⁰

Thus the use of the term *fallacy* is in pragma-dialectics systematically connected with the rules for critical discussion. A “fallacy” is defined as a discussion move that violates in some way a rule for critical discussion applying to a particular discussion stage.⁵¹ In principle, the 10 rules for critical discussion constituting the code of conduct provide all the norms pertinent to resolving a difference of opinion on the merits and cover therefore all fallacies that can be committed in argumentative discourse. In attempting to resolve a difference of opinion by argumentative discourse a considerable number of different things can go wrong. We focus our attention here on some of the most prominent violations of the rules for critical discussion. Although the list of violations that van Eemeren and Grootendorst provide in *Argumentation, Communication, and Fallacies* is, as a matter of course, not complete, it gives a good impression of the great variety of fallacious moves that can occur in the various stages of an argumentative discourse viewed as a critical discussion (1992a, pp. 93–217).

The Freedom Rule (1) can be violated at the confrontation stage in various ways, by both the protagonist and the antagonist. A party can impose restrictions on the

⁴⁹ Cf. the stricter and more negative views of DeMorgan (1847) and Massey (1975).

⁵⁰ For the notions of problem-solving validity (or problem-validity, or objective validity) and (semi)conventional validity (or intersubjective validity), see Sect. 3.9 of this volume. For a demonstration of the problem-solving validity of the rules for critical discussion, see van Eemeren and Grootendorst (1994a). To actually serve as tools for resolving differences of opinion on the merits in argumentative reality, next to being problem-solving valid, the rules for critical discussion also need to be intersubjectively accepted as standards by those involved in the evaluation process, so that they are conventionally valid. See Sect. 10.12.

⁵¹ In pragma-dialectics, the identification of fallacies is always conditional: an argumentative move may be regarded a fallacy only if the discourse in which it occurs may be viewed as aimed at resolving a difference of opinion. A discourse can only be fully and methodically screened for fallacies if it is first determined to what extent it can be reconstructed in terms of a critical discussion and has been adequately analyzed.

standpoints that may be advanced or called into question or deny the other party the right to advance or to criticize a certain standpoint. Violations of the first kind mean that some standpoints are in fact declared taboo and excluded from discussion and that other standpoints are treated as sacrosanct. Violations of the second kind, which are directed at the opponent personally, are aimed at eliminating the other party as a serious discussion partner and can, for instance, be realized by threatening opponents with sanctions (*argumentum ad baculum*), calling on their compassion (*argumentum ad misericordiam*), or discrediting their integrity, impartiality, expertise, or credibility (*argumentum ad hominem*).

The Obligation to Defend Rule (2) can be violated at the opening stage by the protagonist by *evading* or *shifting the burden of proof*. In the case of evading the burden of proof, the protagonist attempts to create the impression that there is no point in calling the standpoint into question, and no need to defend it, by presenting the standpoint as self-evident, giving a personal guarantee of its correctness (variant of *argumentum ad verecundiam*) or “immunizing” it against criticism (e.g., by formulating the standpoint in a way that excludes falsification: “Real men are leaders”). In the case of shifting the burden of proof, the protagonist challenges the antagonist who does not have a burden of proof to show that the protagonist’s standpoint is wrong by proving that the opposite standpoint is right (variant of *argumentum ad ignorantiam*).

The Standpoint Rule (3) can be violated at all stages by the protagonist or the antagonist. In a discussion about a “mixed” difference of opinion (in which both parties have a standpoint to defend), they can do so by imputing a fictitious standpoint to the other party or distorting the other party’s standpoint (*straw man*). The first effect can, for instance, be achieved by emphatically but wrongly presenting one’s own standpoint as the opposite of the opponent’s standpoint or by creating an imaginary opponent for one’s own standpoint and the second by taking the opponent’s words out of context by means of oversimplification (ignoring nuances or vital qualifications) or exaggeration (generalizing what the opponent says or making it absolute).

The Relevance Rule (4) can be violated at the argumentation stage by the protagonist in two ways: first, by putting forward argumentation that does not pertain to the standpoint advanced at the confrontation stage (*irrelevant argumentation* or *ignoratio elenchi*) and, second, by using non-argumentative means of persuasion in promoting the standpoint. Playing on the emotions of the audience (variant of *argumentum ad populum*) and parading one’s own qualities (variant of *argumentum ad verecundiam*) are examples of the second kind of violation. If the audience’s positive or negative emotions (such as prejudice) are exploited so that *pathos* replaces *logos*, such violations of the Relevance Rule are called *pathetical fallacies*. If protagonists attempt to get their standpoints accepted by exploiting the authority they have in the eyes of the other party – because of their integrity, expertise, credibility, or other qualities – in such a way that *ethos* replaces *logos*, such violations of the Relevance Rule are called *ethical* or *ethotic fallacies*.

The protagonist can violate the Unexpressed Premise Rule (5) at the argumentation stage by *denying an unexpressed premise*, and the antagonist can do so by

distorting an unexpressed premise. In denying an unexpressed premise (“I never said that”), the protagonist in effect tries to evade the responsibility assumed in the argumentation by escaping from a commitment to a (correctly reconstructed) unexpressed premise. Antagonists are guilty of the fallacy of distorting an unexpressed premise if they produce a reconstruction of a protagonist’s unexpressed premise that goes beyond the “pragmatic optimum” to which one actually may suppose the protagonist to be committed when pragmatic factors such as the context and the available background information are duly taken into account (see Sect. 10.5).

The Starting Point Rule (6) can be violated at the argumentation stage by the protagonist’s falsely presenting something as a common starting point or by the antagonist’s denying a common starting point. By falsely presenting something as a common starting point, the protagonist tries to *evade the burden of proof*. The techniques used for this purpose include falsely presenting a premise as self-evident, enveloping a proposition slyly in a presupposition of a question (*many questions*), concealing a premise in an unexpressed premise, and advancing argumentation that amounts in fact to the same thing as the standpoint (*petitio principii*, also called *begging the question* or *circular reasoning*). By denying a premise representing a common starting point, the antagonist denies the protagonist an opportunity to defend the standpoint *ex concessis*, which goes against a *conditio sine qua non* for successful argumentation.

The Validity Rule (7) can be violated at the argumentation stage by the protagonist in a variety of ways. Some cases of logical invalidity occur regularly and are not always immediately recognized. Among them are confusing a necessary condition with a sufficient condition (or vice versa) in arguments with an “If . . . , then . . .” premise (*affirming the consequent*, *denying the antecedent*). Other violations amount, for instance, to erroneously attributing a (relative and structure-dependent) property of the constituent parts to the whole or vice versa (fallacies of *composition* and *division*).⁵²

The Argument Scheme Rule (8) can be violated at the argumentation stage by the protagonist by relying on an inappropriate argument scheme or by using an appropriate argument scheme incorrectly. The three main categories of argument schemes distinguished in pragma-dialectics are the following: (1) *symptomatic argumentation* or argumentation of the *token type*, where there is a relation of concomitance between the premise and the standpoint (“Daniel is an actor [and actors are typically vain], so he will certainly be vain”); (2) *comparison argumentation* or argumentation of the *similarity type*, where the relation is one of resemblance (“Your mother should not allow you to stay out until after midnight, because your sister was not allowed to do that either when she was your age [and cases that are similar must be treated equally]”); and (3) *causal argumentation* or argumentation of the *consequence type*, where the relation is one of instrumentality

⁵² For the relationship between relative and structure-dependent properties and the fallacies of composition and division see van Eemeren and Garssen (2009).

(“Because Rose has been drinking an excessive amount of whiskey [and drinking too much alcohol leads to a terrible headache], she must have a terrible headache”). As we shall illustrate by mentioning some presumably inappropriate choices and some incorrect uses of arguments schemes, violations of the Argument Scheme Rule can be classified according to these three categories.

Symptomatic argumentation is inappropriate if, for instance, a scientist argues her standpoint to be right because everybody thinks it is right (populist variant of *argumentum ad populum* and, as such, variant of *argumentum ad verecundiam*). It is used incorrectly (though not inappropriately), for instance, if a practical decision is defended by an appeal to expert authority and the standpoint is said to be right because an irrelevant or quasi-authority says so (variant of *argumentum ad verecundiam*) or if the standpoint is a generalization which is defended on the basis of observations that are not representative or insufficient (*hasty generalization* or *secundum quid*). Comparison argumentation is used incorrectly, if, for instance, in making an analogy the conditions for a correct comparison are not fulfilled (*false analogy*). Finally, causal argumentation is used inappropriately if, for instance, a descriptive standpoint is rejected because of its undesired consequences (*argumentum ad consequentiam*). It is used incorrectly if, for instance, it is without good reason suggested that by taking a proposed course of action, one will be going from bad to worse (*slippery slope*).

The Concluding Rule (9) can be violated at the concluding stage by the protagonist’s concluding that a standpoint is true merely because it has been successfully defended (*making an absolute of the success of the defense*) or by the antagonist’s automatically concluding from the fact that it has not been proved that something *is* the case, that it *is not* the case, or from the fact that something has not been proved *not* to be the case, that it *is* the case (*making an absolute of the failure of the defense* or variant of *argumentum ad ignorantiam*). In making an absolute of the success of the defense, the protagonist commits in principle a double error. First, the status of established fact, the truth of which is beyond discussion, is unjustifiably ascribed to the common starting points. Second, in doing so, a successful defense is erroneously invested with an objective rather than intersubjective status. In making an absolute of the failure of the defense, it is the antagonist who commits a double error. First, the roles of antagonist and protagonist are confused. Second, it is mistakenly assumed that a discussion must always end in a victory for either a positive or a negative standpoint (*false dilemma*), so that not having a positive standpoint automatically means adopting a negative standpoint and vice versa, thus ignoring the possibility of entertaining a neutral (“zero”) standpoint.⁵³

The Language Use Rule (10) can be violated at all stages by the protagonist or the antagonist as they take undue advantage of unclearness (*unclearness fallacy*) or ambiguity (*ambiguity, equivocation, amphiboly fallacy*). Various sorts of

⁵³ For the notion of a zero standpoint, involving only doubt on the part of the antagonist and not a counterstandpoint, see van Eemeren and Grootendorst (1984, pp. 78–81, 1992a, pp. 13–25).

unclearness can occur: unclearness resulting from the structuring of the text, from implicitness, indefiniteness, unfamiliarity, vagueness, and so on. There are also various sorts of ambiguity: referential, syntactic, semantic ambiguity, and so on. The ambiguity fallacy is closely related to the unclearness fallacy. Both can occur on their own but also in combination with other fallacies (such as the fallacies of *composition* and *division*).

An overview of different kinds of violations of the rules for critical discussion is given in Fig. 10.2.

As the overview in Fig. 10.2 shows, in the pragma-dialectical approach, not all fallacies are viewed as violations of one and the same (validity) norm, as happens in the Standard Treatment (see Sects. 3.5 and 3.6 of this volume).⁵⁴ In the pragma-dialectical treatment of the fallacies, a functional variety of norms is distinguished that need to be observed in resolving a difference of opinion on the merits – and the logical validity norm is only one of them. Instead of treating the fallacies as belonging to an unstructured list of nominal categories that happen to have been inherited from the past, each fallacy is systematically connected with the violation of a specific rule for critical discussion. In this way, the fallacies that are traditionally distinguished and are incorporated in the list can be characterized more clearly and consistently, while “new” fallacies can be identified that earlier went unnoticed.

Fallacies that in the traditional categories were only nominally lumped together are in this approach shown to have nothing in common and are clearly distinguished, whereas genuinely related fallacies that were separated before are now brought together. The fallacy traditionally known as *argumentum ad verecundiam*, for example, has variants which prove not to be violations of the same norm, so that they are in fact different types of fallacies. In one variant an appeal to authority is made at the opening stage of the discussion by a party giving a personal guarantee of the correctness of his standpoint (“You can take it from *me* that every war leads to another war”). This fallacy constitutes a violation of the Obligation to Defend Rule (2) that a party who has advanced a standpoint is obliged to defend this standpoint if this is desired. Another variant occurs when a party is prepared to defend its standpoint but does so, in the argumentation stage, by parading its own qualities. This fallacy constitutes a violation of the Relevance Rule (4), which outlaws non-argumentation. Yet another variant occurs when a party, in the argumentation stage, appeals to an authority that is in fact no expert in the field the disputed standpoint relates to (“Recently the eminent theologian Hans Küng clearly confirmed it again: Every war leads to another war”). A fallacy of the latter kind constitutes a violation of the Argument Scheme Rule (8), which prescribes for argumentation from authority that the authoritative source referred to should indeed

⁵⁴ When it comes to the detection of fallacies in argumentative discourse, a distinction needs to be made between the standards defining the various types of fallacies and the criteria that are to be applied in deciding whether a particular speech act conveying a certain argumentative move does or does not violate a certain standard and is therefore to be labelled as a particular type of fallacy. In detecting fallacies, pragmatic insights regarding implicitness and indirectness as well as contextual and background information are to be taken into account.

Violations of Rule 1 (Freedom Rule) by the protagonist or the antagonist at the confrontation stage

- 1 *Placing limits on standpoints or doubts*
 - fallacy of declaring standpoints sacrosanct
 - fallacy of declaring standpoints taboo
- 2 *Restricting the other party's freedom of action*
- * putting the other party under pressure
 - fallacy of the stick (= *argumentum ad baculum*)
 - fallacy of appeal to pity (= *argumentum ad misericordiam*)
 - fallacy of attacking the other party's person (= *argumentum ad hominem*)
 - fallacy of depicting the other party as stupid, bad, unreliable, etcetera (= direct personal attack/"abusive" variant)
 - fallacy of casting suspicion on the other party's motives (= indirect personal attack/"circumstantial" variant)
 - fallacy of pointing out a contradiction in the other party's words and/or deeds (= *tu quoque* variant)

Violations of Rule 2 (Obligation to Defend Rule) by the protagonist at the opening stage

- 1 *Shifting the burden of proof to the other party*
- * in a non-mixed difference of opinion, instead of defending his or her own standpoint, the protagonist forces the antagonist to show that the protagonist's standpoint is wrong
 - fallacy of shifting the burden of proof
- * in a mixed difference of opinion the one party does not attempt to defend his or her standpoint but forces the other party to defend their standpoint
 - fallacy of shifting the burden of proof
- 2 *Evading the burden of proof*
- * presenting the standpoint as self-evident
 - fallacy of evading the burden of proof
- * giving a personal guarantee of the rightness of the standpoint
 - fallacy of evading the burden of proof
- * immunizing the standpoint against criticism
 - fallacy of evading the burden of proof

Violations of Rule 3 (Standpoint Rule) by the protagonist or the antagonist at all discussion stages

- 1 *Attributing a fictitious standpoint to the other party*
- * presenting one's own standpoint wrongly as the opposite standpoint
 - fallacy of the straw man
- * referring to the views of the group to which the opponent belongs
 - fallacy of the straw man
- * creating a fictitious opponent
 - fallacy of the straw man
- 2 *Misrepresenting the other party's standpoint*
- * taking utterances out of context
 - fallacy of the straw man
- * oversimplifying or exaggerating
 - fallacy of the straw man

Violations of Rule 4 (Relevance Rule) by the protagonist at the argumentation stage

- 1 *The argumentation has no relation to the standpoint under discussion*
 - fallacy of irrelevant argumentation (= *ignoratio elenchi*)
- 2 *The standpoint is defended by means other than argumentation*
- * non-argumentation
 - fallacy of playing on the sentiments of the audience (= *pathetical fallacy/argumentum ad populum*)
 - fallacy of parading one's own qualities (= *ethical or ethotic fallacy/argumentum ad verecundiam*)

Fig. 10.2 (continued)

Violations of Rule 5 (Unexpressed Premise Rule) by the protagonist or the antagonist at the argumentation stage

- 1 *Adding an unexpressed premise that goes beyond what is warranted*
 - fallacy of distorting an unexpressed premise
- 2 *Refusing to accept commitment to an unexpressed premise implied by one's defense*
 - fallacy of denying an unexpressed premise

Violations of Rule 6 (Starting Point Rule) by the protagonist or the antagonist at the argumentation stage

- 1 *Meddling with the starting points by falsely denying that something is an accepted starting point*
 - fallacy of falsely denying an accepted starting point
- 2 *Meddling with the starting points by falsely presenting something as an accepted starting point*
 - fallacy of making unfair use of presuppositions in making assertions
 - fallacy of making unfair use of presuppositions in asking questions (= fallacy of many questions)
 - fallacy of using an argument that amounts to the same thing as the standpoint (= fallacy of circular etc.
 - fallacy of circular reasoning/*petitio principii*/begging the question)

Violations of Rule 7 (Validity Rule) by the protagonist at the argumentation stage

- 1 *Reasoning in which a sufficient condition is treated as a necessary condition*
 - fallacy of denying the antecedent
 - fallacy of affirming the consequent
- 2 *Reasoning in which the properties of parts and wholes are confused*
 - fallacy of division
 - fallacy of composition

Violations of Rule 8 (Argument Scheme Rule) by the protagonist at the argumentation stage

- 1 *Using an inappropriate argument scheme*
 - populist fallacy (symptomatic argumentation) (= *argumentum ad populum*)
 - fallacy of confusing facts with value judgments (causal relation) (= *argumentum ad consequentiam*)
- 2 *Incorrectly applying an argument scheme*
 - fallacy of authority (symptomatic argumentation) (= *argumentum ad verecundiam*)
 - fallacy of hasty generalization (symptomatic argumentation) (= *secundum quid*)
 - fallacy of false analogy (comparison argumentation)
 - fallacy of the slippery slope (causal argumentation)

Violations of Rule 9 (Concluding Rule) by the protagonist or the antagonist at the concluding stage

- 1 *Meddling with the conclusion by the protagonist*
 - fallacy of refusing to retract a standpoint that has not been successfully defended
 - fallacy of concluding that a standpoint is true because it has been defended successfully
- 2 *Meddling with the conclusion by the antagonist*
 - fallacy of refusing to retract criticism of a standpoint that has been successfully defended
 - fallacy of concluding that a standpoint is true because the opposite has not been successfully defended (= *argumentum ad ignorantiam*)

Violations of Rule 10 (Language Use Rule) by the protagonist or the antagonist at all the discussion stages

- 1 *Misusing unclarity*
 - unclarity fallacy (implicitness, indefiniteness, unfamiliarity, vagueness)
- 2 *Misusing ambiguity*
 - ambiguity fallacy

Fig. 10.2 Overview of violations of the rules for critical discussion

be an authority in the area concerned. Other examples of variants of a fallacy which are not the same kind of fallacy when viewed from the perspective of resolving differences of opinion on the merits are the fallacy traditionally viewed as an *argumentum ad populum* which constitutes a violation of the Relevance Rule (4) and the fallacy traditionally viewed as an *argumentum ad populum* which violates the Argument Scheme Rule (8). In contradistinction, the fallacy traditionally regarded as a variant of the *argumentum ad verecundiam* and the fallacy traditionally regarded as a variant of the *argumentum ad populum* which are both violations of the Argument Scheme Rule (8) are variants of the same kind of fallacy when viewed from the perspective of resolving differences of opinion on the merits.

The pragma-dialectical approach of fallacies as violations of rules for critical discussion also enables us to distinguish some obstacles to resolving a difference of opinion on the merits that were earlier not recognized, and were therefore unnamed, which are to be registered as “new” fallacies. These include *declaring a standpoint sacrosanct* (violation of the Freedom Rule, 1), *evading the burden of proof* by *immunizing a standpoint against criticism* (violation of the Obligation to Defend Rule, 2), *denying an unexpressed premise* (violation of the Unexpressed Premise Rule, 5), *falsely presenting something as a common starting point* (violation of the Starting Point Rule, 6), *falsely presenting a premise as self-evident* (violation of the Starting Point Rule, 6), *denying an accepted starting point* (violation of the Starting Point Rule, 6), and *making an absolute of the success of the defense* (violation of the Concluding Rule, 9).

10.8 Strategic Maneuvering in Argumentative Discourse

Starting from the model of a critical discussion, the pragma-dialectical theorizing has moved gradually, and in various stages, from the analytic level of abstract idealization exemplified in the model of a critical discussion to the concrete level of the manifold practices of argumentative discourse. A crucial step in this development was taken in the 1990s when van Eemeren set about, together with Houtlosser, to strengthen the connection of pragma-dialectics with argumentative reality by taking the “strategic design” of argumentative discourse into account in the theorizing (van Eemeren and Houtlosser 2002a). This inclusion was aimed at extending the theoretical tools of pragma-dialectics in such a way that a more profound and more realistic analysis and evaluation of argumentative discourse could be given than the available *standard theory* allowed.⁵⁵ In addition, the analysis and evaluation were to be more securely justified. van Eemeren (2010) expounded the *extended theory* in *Strategic Maneuvering in Argumentative Discourse*.

⁵⁵ The inclusion of an account of strategic considerations in the theorizing should also be instrumental in developing more sophisticated methods for improving the quality of oral and written argumentative discourse.

In order to account for the strategic design of argumentative discourse, next to the dimension of reasonableness predominant in the standard theory, the dimension of effectiveness needs to be incorporated in the theorizing. Van Eemeren and Houtlosser took as their starting point that in real-life argumentative discourses aiming for effectiveness and aiming for reasonableness always go together. In every argumentative move that is made in the discourse, the arguers pursue simultaneously the objectives of being effective and of maintaining reasonableness. In making argumentative moves, arguers are out to achieve the effect of acceptance in the audience they want to reach, but to achieve this effect based on the merits of the moves they make, they need to remain within the boundaries of reasonableness as defined by the rules for critical discussion. Because pursuing at the same time these two objectives inevitably creates a certain tension, the arguers have to keep a delicate balance. This is why, according to van Eemeren and Houtlosser, making an argumentative move always involves *strategic maneuvering* to reconcile aiming for effectiveness with being reasonable.

Adopting the theoretical notion of *strategic maneuvering* adds, because of the inclusion of the dimension of effectiveness, a *rhetorical* dimension to the theorizing. This does not mean, however, that the pragma-dialectical theory has all of a sudden become a rhetorical theory. Only rhetorical insights pertaining to aiming for effectiveness in argumentative discourse that can be enlightening in dealing with strategic maneuvering are brought to bear.⁵⁶ In the extended pragma-dialectical theory, they are integrated into a dialectical framework of analysis and evaluation.

Although Aristotle took a profound interest in both the dialectical and the rhetorical perspectives on argumentative discourse⁵⁷ and the two perspectives remained for a long time connected in a more competitive relationship, they were, in the early seventeenth century, completely separated and came to be seen as incompatible paradigms (van Eemeren 2013a). To remedy the division, the existing conceptual and communicative gap between the dialectical research community and the rhetorical research community needs to be bridged (van Eemeren 2010). According to van Eemeren and Houtlosser (2002a), the two perspectives are not really incompatible and can even be in many ways complementary. In their opinion, viewed from a critical point of view, paying attention to rhetorical effectiveness is only worthwhile within the boundaries of dialectical reasonableness, and setting dialectical standards of reasonableness is only of any practical significance if it is combined with paying attention to rhetorical tools for achieving effectiveness. This is why in their view the future of argumentation theory lies in a constructive (“functional”) integration of the dialectical and the rhetorical

⁵⁶ The study of aiming for effectiveness in argumentative discourse is generally seen as part of the core business of rhetoric (Wenzel 1990; Hampl 2007; van Eemeren 2010, pp. 66–80). In particular since the development of “Big Rhetoric,” however, the scope of rhetoric is restricted neither to effectiveness nor to argumentative discourse. See Foss et al. (1985), Lunsford et al. (2009), and Swearingen and Schiappa (2009).

⁵⁷ See Wagemans (2009), who situates the pragma-dialectical proposal to combine the dialectical and the rhetorical perspectives against the background of antique dialectic and rhetoric.

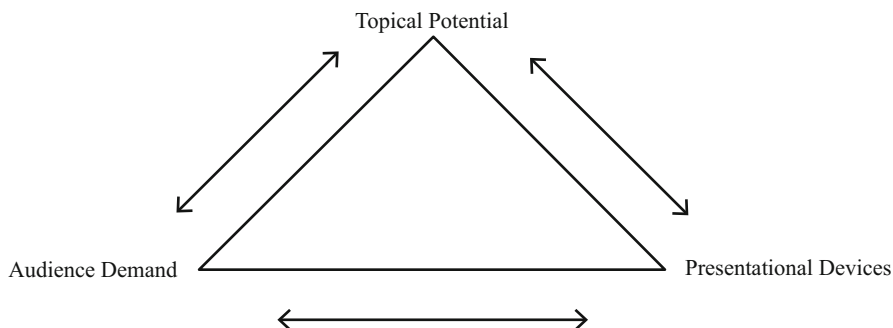


Fig. 10.3 The strategic maneuvering triangle

perspectives on argumentation (van Eemeren 2010, pp. 87–92).⁵⁸ The notion of strategic maneuvering is their primary theoretical tool to bring about such integration.

Strategic maneuvering manifests itself in all argumentative moves in three different aspects: (1) the *selection from the topical potential*, i.e., from the set of alternatives available at that point in the discourse; (2) the *adaptation to audience demand*, i.e., to the frame of reference of the listeners or readers the speaker or writer intends to reach; and (3) the *exploitation of presentational devices*, i.e., the stylistic and other means of expression suitable to serve the purpose.⁵⁹ These three aspects are in fact foci of attention characterizing three prominent rhetorical research traditions: the examination of topical systems, audience orientation, and stylistics. All three aspects come about in one and the same oral or written argumentative move, and they manifest themselves simultaneously in the discourse. It is nevertheless useful to distinguish between them analytically before considering their interaction because they represent different kinds of choices that are to be made in strategic maneuvering and may each have their own effect.

In Fig. 10.3, the interdependency of the three aspects of strategic maneuvering is expressed by representing their mutual relationships in the *strategic maneuvering triangle* (van Eemeren 2010, pp. 93–96).

Strategic maneuvering takes place at all stages of the argumentative process of resolving a difference of opinion on the merits. At every stage the parties are presumed to be out to achieve the dialectical objective of the stage concerned and to achieve at the same time the optimal rhetorical result. Each of the dialectical aims of the four discussion stages may therefore be taken to have its rhetorical analogue, and the arguers make use of strategic maneuvering to reconcile the simultaneous

⁵⁸ The rapprochement between dialectical and rhetorical approaches to argumentation is also stimulated by argumentation scholars such as Wenzel (1990) and Tindale (2004).

⁵⁹ The term *strategic maneuver* refers both to the process of making choices regarding the three aspects and to the product resulting from making these choices.

	<i>Dialectical dimension</i>	<i>Rhetorical dimension</i>	<i>Aspect of topical choice</i>	<i>Aspect of anticipating audience demand</i>	<i>Aspect of presentational choice</i>
	<i>Reasonableness</i>	<i>Effectiveness</i>	<i>Reasonable and effective topical selection</i>	<i>Reasonable and effective handling of audience demand</i>	<i>Reasonable and effective use of presentational devices</i>
<i>Confrontation stage</i>	Reasonable definition of difference of opinion	Effective definition of difference of opinion	Reasonable and effective choice of issues and critical responses	Reasonable and effective adjustment of issues and critical responses to audience	Reasonable and effective presentational design of issues and critical responses
<i>Opening stage</i>	Reasonable establishment of point of departure	Effective establishment of point of departure	Reasonable and effective choice of procedural and material starting points	Reasonable and effective adjustment of procedural and material starting points to audience	Reasonable and effective presentational design of procedural and material starting points
<i>Argumentation stage</i>	Reasonable development of lines of attack and defense	Effective development of lines of attack and defense	Reasonable and effective choice of arguments and criticisms	Reasonable and effective adjustment of arguments and criticisms to audience	Reasonable and effective presentational design of arguments and criticisms
<i>Concluding stage</i>	Reasonable statement of results	Effective statement of results	Reasonable and effective choice of conclusion regarding the results	Reasonable and effective adjustment of conclusion regarding the results to audience	Reasonable and effective design of presentation of conclusion regarding the results

Fig. 10.4 Aspects of strategic maneuvering with two dimensions in four discussion stages

pursuit of these two different aims. Figure 10.4 provides an overview of the dialectical and rhetorical dimensions of the four discussion stages by specifying the dialectical and rhetorical aims pursued at each of these stages and the ways in which their simultaneous pursuit manifests itself in the three aspects of strategic maneuvering.

A dialectical aim has its rhetorical analogue not only at the level of the discussion as a whole and at the level of the various discussion stages but also at the level of the individual argumentative moves that are made. In each argumentative move, the dialectical aim that is pursued has a rhetorical parallel. In principle, the joint pursuit of the dialectical and the rhetorical aims will manifest itself in all three aspects of strategic maneuvering. In actual argumentative discourse however, more often than not the strategic function of an argumentative move is most prominently represented or only clearly evident, in one particular aspect – say in the way in which the move is phrased.⁶⁰

⁶⁰ However, for an argumentative move to be characterized as a particular strategic maneuver, the way in which the two other constitutive aspects of strategic maneuvering manifest themselves in the move should not contradict this characterization.

The strategic maneuvers an arguer carries out during the discussion or during a particular discussion stage combine into a full-fledged *argumentative strategy* if the argumentative moves concerned are all designed to achieve the same kind of dialectical and rhetorical result. Employing an argumentative strategy involves coordination both at the “horizontal” level of the consecutive strategic maneuvers and at the “vertical” level of the three aspects of strategic maneuvering. This means that in an argumentative strategy the argumentative moves that are made constitute together a concerted succession of strategic maneuvers furthering one and the same outcome and that in all argumentative moves that are part of the strategy the topical, audience-oriented, and stylistic choices cohere. Next to general discussion strategies affecting the discussion as a whole, there may be specific “confrontational” strategies in the confrontation stage, pertaining to the management of the “disagreement space”⁶¹; specific “opening” strategies in the opening stage, pertaining to the establishment of the “zone of agreement”; specific “argumentational” strategies in the argumentation stage, pertaining to the shaping of the lines of attack and defense⁶²; and specific “concluding” strategies in the concluding stage, pertaining to the determination of the outcome of the discussion.⁶³

For a brief illustration of how a discussion strategy develops, we turn to an extract from John le Carré’s novel *A Perfect Spy*, in which a father, the main character, tries to prevent his little son from crying over his father’s heading off again after a short visit. The father is a charming con man for whom a great many other things are more urgent than to visit his son, who nevertheless loves him dearly. To make his son accept his view that he should not start crying, the father says:

Do you love your old man? Well then. . .

The confrontation stage is in this case clear from the context. The father’s standpoint that the boy should not start crying, which he leaves wisely implicit, collides with the little boy’s apparent inclination to do so. The father’s observation that the boy loves his dad, presented indirectly in the form of a rhetorical question, constitutes the starting point that creates the opening stage. By means of the expression “well then,” the father next turns the indisputable starting point that the boy loves his father into an argument for his standpoint that he should not start crying, thus realizing the argumentation stage. The concluding stage is in the text clearly marked by three dots (“...”), but the obvious conclusion that the boy should not start crying is not mentioned explicitly. It is remarkable how easy, even in such a tiny discourse, all stages of a critical discussion can be identified and reconstructed.

Step by step, the strategic maneuvering taking place in this discourse builds up to a discussion strategy which hinges on a variant of the rhetorical figure known as

⁶¹ For the notion of *disagreement space* and the notion of *virtual standpoints*, which is connected with it, see van Eemeren et al. (1993, pp. 95–96).

⁶² In the pragma-dialectical view, the “stock issues” pertinent to the kinds of attacks and defenses that can be developed depend, among other things, on the type of standpoint at issue.

⁶³ For some examples of the various strategies, see van Eemeren (2010, pp. 46–47).

conciliatio. First, by means of a rhetorical question that does not need an answer, the father attributes a proposition to his son the boy will surely agree with: “You love your father” – or, from the boy’s perspective, “I love daddy.” By subsequently adding “well then,” the father implies that – *given* his acceptance of the proposition that he loves his dad – the boy should also accept the not explicitly stated standpoint that he should not start crying. Whether the use of this discussion strategy, which was effective in the novel, should in this case be regarded reasonable from a pragma-dialectical perspective still remains to be seen.⁶⁴

10.9 Conventionalization of Argumentative Discourse

Strategic maneuvering does not take part in an idealized critical discussion but in the multi-varied communicative practices that have developed in empirical reality. In the extended pragma-dialectical theory, the institutional conventionalization of these communicative practices is therefore duly taken into account (van Eemeren 2010, pp. 129–162).⁶⁵ This means that the “communicative activity types” are analyzed that have established themselves in the various *communicative domains*. These communicative activity types may be formally conventionalized, as is generally the case in the legal domain, but they may also be less formally or only informally conventionalized, as is customary in the political, the academic, and the personal domains. In some cases the conventions are expressed in explicit constitutive or regulative rules; in other cases they consist of largely implicit regulations or simply established usage.

In the pragma-dialectical conception, *communicative activity types* are conventionalized communicative practices whose conventionalization serves to meet the institutional exigencies of the communicative domain in response to which they have developed (van Eemeren 2010, pp. 139–145).⁶⁶ The rationale of the conventionalization of a particular communicative activity type is reflected in its *institutional*

⁶⁴ By suggesting that this is the end of the discussion, the father does not really give the boy a chance to draw his own conclusion, but forces him by means of emotional pressure more or less to accept his standpoint. In spite of what is implied by the use of “well then,” however, in agreeing that he loves his father, the son commits himself in no way to accepting the unexpressed premise that someone who loves someone else should never do something that the loved one does not like. Suggesting all the same, as the father does, that such a commitment exists is in pragma-dialectics viewed as fallacious. However, because the father pressures his son so strongly, a preliminary higher-order condition for conducting a critical discussion may be unfulfilled so that a fallacy judgment does not apply.

⁶⁵ Pragma-dialecticians use the terms *institutional* and *institutionalized* in a broad sense, pertaining to all socially and culturally established communicative practices that are formally or informally conventionalized (see also Hall and Taylor 1996). Like Searle (1995), they see institutions as dealing with rights and duties by means of socially constructed rules and sanctions associated with these rules.

⁶⁶ For a related meaning of the term *activity type* see Levinson (1992, p. 69).

point. In a communicative activity type, the realization of this institutional point is pursued through the implementation of the appropriate “genre of communicative activity.”⁶⁷ The *genres of communicative activity* that may be implemented in the various communicative activity types include, among a great many others, “adjudication,” “deliberation,” “disputation,” and “communion-seeking.”⁶⁸

The strictly conventionalized communicative activity types in the legal domain, prototypically implementing the genre of adjudication, include next to general activity types such as conducting a civil lawsuit or a criminal trial more specific ones such as summoning and returning a verdict, which can also be seen as separate parts of activity types. Among the less strictly conventionalized communicative activity types in the political domain, prototypically making use of the genre of deliberation,⁶⁹ are the various local variants of general plenary parliamentary debates, presidential debates, and Prime Minister’s Question Time. Communicative activity types in the academic domain, prototypically exploiting the genre of disputation, are as a rule conventionalized by the peer group; they encompass, for instance, a keynote speech at a conference, a scientific paper, and a book review. Informally conventionalized communicative activity types in the interpersonal domain, prototypically practicing the genre of communion-seeking, include a chat between friends but also a love letter.⁷⁰

The communicative activity types that have developed in the various domains of communicative activity manifest themselves in a continual succession of speech events of those types.⁷¹ In some cases, pragma-dialecticians are interested

⁶⁷ Fairclough characterizes a “genre” of communicative activity broadly as “a socially ratified way of using language in connection with a particular type of social activity” (1995, p. 14). The term *action schemes*, defined by Rigotti and Rocci (2006, p. 173) as “culturally shaped ‘recipes’ for interaction congruent with more or less broad classes of joint goals and involving scheme-roles presupposing generic requirements,” has a similar meaning, but is used to refer both to genres of communicative activity and communicative activity types. According to Greco Morasso, an activity type corresponds with “an interaction scheme applied to a precise interaction field” (2009, note 169).

⁶⁸ Certain communicative activity types are hybrids in the sense that they involve the activation of a combination of several genres of conventionalized communicative activity. Political interviews, for example, are communicative activity types in which the genres of deliberation and dissemination of information are prototypically combined.

⁶⁹ The term deliberation is here used in the broad meaning given to this concept by Habermas (1994, p. 8; 1996, pp. 307–308) and other protagonists of “deliberative democracy.” In their view, intended to replace the traditional view of political deliberation as an activity conducted only in formal institutions such as parliaments, informal and less regulated communication among citizens are equally important to rational democratic politics.

⁷⁰ The institutional point of the “interpersonal” communicative activity types generally is to keep the relationship going. However noncommittal some of these communicative activity types may seem, some implicit conventions always need to be observed, even if no well-defined institutional goals are pursued.

⁷¹ Unlike Hymes (1972), who uses the term *speech event* for communicative activity types as well as their actual manifestations, we restrict our use of this term to the latter.

<i>domains of communication</i>	<i>genres of communicative activity</i>	<i>communicative activity types</i>	<i>speech events</i>
legal communication	adjudication	<ul style="list-style-type: none"> - criminal trial - civil court case - arbitration - summoning 	plea of the defense at O.J. Simpson's murder trial [criminal trial]
political communication	deliberation	<ul style="list-style-type: none"> - American presidential debate - general debate in the European Parliament - Prime Minister's Question Time 	1960 Nixon-Kennedy debate [American presidential debate]
academic communication	disputation	<ul style="list-style-type: none"> - book review - scientific paper - keynote speech 	Dr. Apt's critique of <i>Controversy and Confrontation</i> [book review]
interpersonal communication	communion-seeking	<ul style="list-style-type: none"> - chat - love letter - party invitation 	Dima's talk with Corina on May 13 about how they spent the weekend [chat]

Fig. 10.5 Relationships between speech events, communicative activity types, genres of communicative activity, and communicative domains

in the specifics of a particular individual speech event.⁷² These usually concern a text or discussion with a special historical, political, or cultural meaning, such as William the Silent's *Apologia* pamphlet, published in 1580, in defense of the Dutch Revolt (van Eemeren and Houtlosser 1999, 2000b, 2003b). In other cases, pragma-dialecticians are only interested in individual speech events as tokens of a particular communicative activity type. All individual television debates between American presidential candidates, for instance, are then seen as specimens of an American presidential debate. In Fig. 10.5, taken from van Eemeren (2010, p. 143), we illustrate by means of some examples the relationships at the macro-level of argumentative discourse between speech events, communicative activity types, genres of communicative activity, and domains of communication.

Because of their empirical status, communicative activity types are not on a par with theoretical constructs such as the model of critical discussion: instead of representing analytic idealizations, they refer to conventionalized communicative

⁷² See, for instance, Hietanen's (2005) analysis of Paul's argumentation in Galatians 3.1–3.5, in which pragma-dialectics is used in New Testament exegesis.

practices.⁷³ Communicative activity types can be distinguished empirically through observation of their distinctive features and discovering their conventionalization from the way they manifest themselves. A great many communicative activity types however are so familiar to everyone that making such an effort is not even necessary. By describing the specific goals that are pursued to realize their institutional point, their distinctive conventions, and other empirical characteristics of their format, communicative activity types can be defined more precisely.

Communicative activity types can, of course, be non-argumentative, but more often than not argumentation comes in, whether directly or indirectly. If in a communicative activity type argumentation plays an important part and the activity type is therefore inherently, essentially, predominantly, or incidentally argumentative, it is worthwhile to characterize it argumentatively. In this endeavor the theoretical model of a critical discussion can be instrumental by using it as a “template.”⁷⁴ Because of their different institutional points and the different institutional requirements they have to meet, the argumentative dimension is substantiated in different ways in the various communicative activity types. Taking the four stages of a critical discussion as point of departure, four focal points can be distinguished in the resolution process taking place in the argumentative discourse that need to be accounted for in the argumentative characterizations of the various communicative activity types. By examining the characteristics of these empirical counterparts of the four stages of a critical discussion in argumentative discourse, it can be made clear how the various stages of the resolution process are realized in a particular communicative activity type. The four focal points are the *initial situation* (analogue of the confrontation stage), the *starting points* (analogue of the opening stage), the *argumentative means and criticisms* (analogue of the argumentation stage), and the *outcome of the discourse* (analogue of the concluding stage).

Figure 10.6, which is based on a similar figure in van Eemeren (2010, p. 151), indicates how, concentrating on the empirical counterparts of the four stages of a critical discussion, the institutionally distinctive argumentative properties can be described of a number of clusters of communicative activity types (listed on the left), which implement different genres of communicative activity. In providing

⁷³ As van Eemeren et al. (2010) explain, the pragma-dialectical communicative activity types share some common ground with Walton and Krabbe’s (1995) “dialogue types.” However, with dialogue types, it is not clear whether they are distinguished on the basis of analytic considerations or on the basis of empirical observation, so that it is not certain whether their status is normative or descriptive. Walton (1998, p. 30) maintains that each dialogue type constitutes a separate normative model of argumentation, but in describing the dialogue types, he refers continually to empirical observations. Because of their institutional and empirical orientation, Jacobs and Aakhus (2002), Aakhus (2003), and Jackson and Jacobs (2006), who view the conditions a specific context imposes on argumentative discourse in terms of “design,” come closer to the pragma-dialectical approach.

⁷⁴ Using a critical discussion as the general point of reference in the argumentative characterization of all communicative activity types leads to consistent and coherent characterizations and creates possibilities for a unified comparison between communicative activity types.

	<i>initial situation</i>	<i>starting points</i>	<i>argumentative means and criticisms</i>	<i>outcome of the discourse</i>
<i>adjudication</i>	dispute about evaluative standpoint; 3 rd party with jurisdiction to decide	largely explicit codified rules; explicitly established concessions	argumentation from facts and concessions interpreted in terms of conditions for the application of a legal rule	settlement dispute by motivated decision 3 rd party (no return to initial situation)
<i>deliberation</i>	mixed disagreement about evaluative or prescriptive standpoint; decision up to participants or non-interactive audience	largely implicit intersubjective rules; explicit and implicit concessions on both sides	argumentation in defense of incompatible stand points in critical exchanges	decision by participants (or return to initial situation) or decision by non-interactive audience
<i>disputation</i>	well-defined difference of opinion about descriptive standpoint; participants as a company entitled to provisional conclusion	largely explicit and established procedural starting points; largely explicit set of shared and non-shared material starting points	joint critical testing process consisting of more or less systematic exchange of pro-arguments and contra-arguments	joint conclusion about results testing process (or creation new initial situation)
<i>communion - seeking</i>	non-mixed difference of opinion about descriptive, evaluative and/or prescriptive standpoint (potentially developing into a mixed difference); decision up to the parties	implicitly and informally regulated practice; broad zone of agreement of shared starting points	argumentation incorporated in directly and indirectly expressed multi-varied interpersonal exchanges	conclusion by mutually accepted outcome (or return to initial situation)

Fig. 10.6 Argumentative characterization of four clusters of communicative activity types

such a description, the communicative activity types concerned are in a pragma-dialectical way characterized as *argumentative activity types*.

The conventionalization instrumental in achieving the institutional point and goals of a communicative activity type as it is described in an argumentative characterization imposes certain extrinsic constraints on the argumentative discourse taking place in that activity type. This conventionalization must therefore be duly taken into account in the analysis and the evaluation of the argumentative discourse. Because the extrinsic constraints on the argumentative discourse may have an effect on the argumentative moves that can be made in an activity type, they constitute *institutional preconditions* for strategic maneuvering in the communicative practice concerned. Since the argumentative characterization of a communicative activity type provides a description of the institutional conventionalization that motivates the extrinsic constraints, it constitutes the proper point of departure for determining these constraints, i.e., the institutional preconditions for strategic maneuvering in that activity type.

Because the institutional conventionalization motivates specific extrinsic constraints, certain modes of strategic maneuvering may, in a certain communicative activity type, be particularly suitable or, as the case may be, unsuitable for pursuing the “missions” the participants have in realizing the institutional point of that particular communicative activity type.⁷⁵ The more precisely the argumentative characterization of a communicative activity type defines its conventionalization, the easier it is to identify the institutional preconditions for the use of particular modes of strategic maneuvering in that activity type.⁷⁶ As the argumentative characterizations given in Fig. 10.6 make clear, in some communicative activity types, the definition of the initial situation leaves more room for being shaped by the participants than in others. A similar variety between activity types can be observed with regard to the choice of procedural and material starting points, the use of argumentative means and the advancement of criticism, and the outcomes aimed for in the discourse. At each of the stages of the argumentative exchange, all three aspects of strategic maneuvering can be affected by the institutional preconditions that the conventionalization of the activity type in which the exchange takes place imposes on the argumentative discourse (van Eemeren 2010, pp. 93–127). There may be extrinsic constraints on the topical choices that can be made, on the adaptation to audience demand that is allowed, and on the use of presentational

⁷⁵ In some communicative activity types the participants have different missions, depending on their role in the activity type. In Prime Minister’s Question Time, for instance, the parliamentarians’ mission is to hold the government to account for its policies and actions, whereas the Prime Minister’s mission is to justify them.

⁷⁶ Besides official, usually formal, and often procedural *primary preconditions*, pragma-dialectics distinguishes *secondary preconditions*, which are unofficial, usually informal, and often substantial. In the communicative activity type of a general debate in the European parliament, for instance, the rules of order guarded by the Chair are primary preconditions while the “European predicament” that the parliamentarians need to combine serving the interests of Europe and those of their home countries is a secondary precondition (see Sect. 10.13).

devices. Although in principle such constraints are a limitation of the possibilities for strategic maneuvering, they may also create special opportunities for strategic maneuvering, if only for one of the parties.

10.10 Fallacies as Derailments of Strategic Maneuvering

According to van Eemeren and Houtlosser (2008), in combination with the concept of strategic maneuvering, insight in the conventionalization of argumentative discourse in the various communicative activity types can be of help in detecting fallacies and explaining why in vivo they can be so hard to nail down. The rules for critical discussion incorporate all the norms pertinent to resolving a difference of opinion on the merits, but this does not mean that in actual argumentative practices it is in all cases automatically clear whether or not the pragma-dialectical standards of reasonableness have been violated. To be able to reach a verdict, precise criteria are required for determining if a certain argumentative move made in a particular communicative activity type is carried out in agreement with the standards as they are to be applied in the communicative activity type concerned.

As a rule, in genuine speech events, even when they are argumentative, the discourse will not correspond with the ideal model of a critical discussion – at least not immediately, explicitly, and completely. Usually the whys and wherefores of the various kinds of divergences can easily be explained by referring to pragmatic insight in the natural characteristics of ordinary discourse⁷⁷ – and occasionally by blaming them to haste or sloppiness. It would therefore not do to simply declare all argumentative behavior that does not seem to agree with the model of a critical discussion automatically defective. For an adequate evaluation, the discourse first needs to be carefully reconstructed in terms of a critical discussion. And even when violations of the rules for critical discussion do occur, they are in practice not always irreversible, so that they need not spoil the resolution process. As long as the party that is guilty of a fallacy may be regarded as nonetheless committed to the general “Principle of Reasonableness” underlying the rules for critical discussion (van Eemeren 2010, p. 32, p. 253), the rule violation may be no more than an incidental offense against the critical standards of reasonableness which can be repaired instantly. If, however, the perpetrator has withdrawn this commitment to the Principle of Reasonableness, the reasonable exchange has come to an end – and when this becomes clear any persuasive effect of the fallacious move will probably be lost.

The fact that it may be possible to repair a fallacious move does not diminish the harmful effect that fallacies can have on the process of resolving a difference of

⁷⁷ Van Eemeren mentions in this connection the structuring of the discourse in accordance with what is considered topical or relevant at a particular point, the underexposure of what is considered evident or known, the overexposure of what is considered important or significant, and the lack of precision and elaboration that is deemed unnecessary (2010, p. 197).

opinion on the merits. It remains therefore vital to make a sharp distinction between sound and fallacious argumentative moves. In pragma-dialectics this distinction is emphasized by using the traditional (often Latinized) names of the fallacies, such as *argumentum ad hominem* and *argumentum ad verecundiam*, exclusively for referring to the fallacious versions of argumentative moves and using a neutral label, such as *personal attack* and *authority argument*, for referring to their non-fallacious counterparts. Fallacies are not just argumentative moves that are harmful, but in principle these moves are also potentially treacherous, because their fallacious character is not to all arguers immediately clear. This is why pragma-dialecticians consider the detection of fallacies and the search for an explanation of their potential persuasiveness of vital importance.

When it comes to the detection of fallacies in argumentative discourse, the pragma-dialectical approach boils down to determining whether the (reconstructed) speech acts expressing the argumentative moves that are made in the discourse agree with the relevant rules for critical discussion and in case of a norm violation determining what kind of fallacy has been committed. Such a determination can take place only if it is fully clear exactly which criteria are to be met in the case concerned for satisfying the critical norm that is at issue. Although in pragma-dialectics the norms that serve as the standards are provided, the criteria for determining whether or not in actual argumentative practices these norms have been observed are not yet always available (van Eemeren and Houtlosser 2008). In identifying these criteria, one may have recourse to the conventionalization that applies to the communicative activity type in which the argumentative moves to be judged are made (van Eemeren 2010, pp. 204–206). By thus strengthening the evaluation process, the extended pragma-dialectical theory can provide a suitable basis for explaining how fallacies, which are not in agreement with the appropriate criteria, “work” and can be successful in practice.

The view that strategic maneuvering is aimed at alleviating the potential tension between reasonableness and effectiveness implies that all moves made in argumentative discourse can be regarded to serve simultaneously both objectives, but not that the pursuit of these two objectives will always be in perfect balance. One important reason for this is that in their zeal to promote their case effectively, arguers may at times be inclined to neglect their commitment to reasonableness. If they do and violate in the process one or more of the rules for critical discussion, their strategic maneuvering *derails* into fallaciousness.⁷⁸ According to van Eemeren’s (2010, p. 198) definition, all derailments of strategic maneuvering in which the process of resolving a difference on the merits is hindered or obstructed are fallacies, and all fallacies that have been identified in

⁷⁸ Arguers may sometimes also neglect their interest in effectiveness – say for fear of being perceived as unreasonable. This can result in rhetorically bad strategic maneuvering, but not in a fallacy.

pragma-dialectics manifest themselves in argumentative discourse as derailments of strategic maneuvering.

Echoing the logical standard definition of a fallacy as an argument that *seems valid but is not valid* (see Sect. 3.6 of this volume), the pragma-dialectical standard definition of a fallacy as a violation of a rule for critical discussion can now be complemented in such a way that the potentially treacherous character of the fallacies is acknowledged. A fallacy is then described as a strategic maneuver that to some arguers *seems to comply with the rules for critical discussion but does not comply with the rules*. The question that remains is why such potentially treacherous deviations from the rules for critical discussion are in certain cases for some arguers so hard to detect. Starting from the extended pragma-dialectical theory of argumentation, van Eemeren (2010, pp. 198–200) mentions several possible causes.

To begin with, arguers will be inclined to hide any unreasonableness in their strategic maneuvering as much as possible from others. None of the participants in argumentative discourse will be very keen on portraying themselves as unreasonable, if only because their argumentative moves might become less effective if they would do so. Because it is normally assumed that in argumentative discourse both parties will uphold a commitment to reasonableness, a presumption of reasonableness is conferred on every discussion move.⁷⁹ This presumption of reasonableness will also be operative when in a particular case a strategic maneuver happens to be fallacious. Both separately and in combination, the arguers' mechanisms of avoiding their being perceived as unreasonable and of conferring the presumption of reasonableness on every discussion move promote that an argumentative move will be perceived as reasonable and therefore complicate the detection of fallacies.

Instead of resorting to entirely different means, parties overstepping the boundaries of reasonableness are likely to try to reach their rhetorical objectives by trying to stay as close as possible to the established means for achieving one's objectives in a reasonable way by "stretching" the scope of these means in such a way that the fallacious maneuvering is covered. According to van Eemeren (2010, pp. 196–200), they are helped in this endeavor by three interconnected characteristics of strategic maneuvering in context: (1) sound and fallacious strategic maneuvers are of the same kind, and sound and fallacious manifestations of the same mode of strategic maneuvering look essentially the same; (2) a particular mode of strategic maneuvering may encompass a continuum that varies from clearly sound to clearly fallacious strategic maneuvering, with less clear cases in between; (3) in different communicative activity types, the soundness criteria that pertain to a certain mode of strategic maneuvering may differ to some extent.

According to (1), a fallacy and its sound counterpart represent the same mode of strategic maneuvering. This applies, for example, to an *argumentum ad hominem* and a sound personal attack but also to an *argumentum ad verecundiam* and a sound argument from authority. Instead of being distinguished from each other as

⁷⁹ For the presumption of reasonableness, see Jackson (1995).

completely different animals, fallacies therefore have the same distinctive features as their sound counterparts, so that in some cases it may be hard to tell them apart.

According to (2), in case of strategic maneuvers somewhere at the center of the sound-fallacious continuum of a certain mode of strategic maneuvering, it may be hard to decide about their fallaciousness. For didactical reasons, it is in textbook examples usually perfectly clear that a certain use of an argument from authority is fallacious and should be considered an *argumentum ad verecundiam*. In actual argumentative discourse, however, detecting an *argumentum ad verecundiam* is sometimes much more difficult.

According to (3), in different communicative activity types, the soundness criteria applying to a certain mode of strategic maneuvering may vary to some extent according to the specific institutional requirements the conventionalization of the activity types responds to. If similar cases of a certain mode of strategic maneuvering are considered sound in the one communicative activity type, its fallaciousness in other communicative activity types may be easily overlooked. This explains why, particularly in communicative activity types that are less familiar to the evaluator, fallacies may sometimes pass unnoticed.

In view of the contextual differentiation in the soundness criteria that must be applied in checking whether a certain rule for critical discussion has been complied with, it is necessary to make a distinction between *general* soundness criteria for strategic maneuvering, which always apply because they are context independent,⁸⁰ and *specific* soundness criteria, which are dependent on the institutional macro-context in which a certain mode of strategic maneuvering is employed and which vary to some extent in particular communicative activity types. In textbooks, as a rule, only general soundness conditions are discussed. Since the examples that are given are then usually clear cases of the fallacies that are treated, the need to take the institutional macro-context into account in determining the fallaciousness of argumentative moves is not obvious from the treatment.

Specific soundness criteria indicate how the general soundness criteria for complying with a certain standard of reasonableness need to be implemented in the macro-context of a specific communicative activity type. In some cases specific adaptations have to be made. For certain modes of strategic maneuvering, specific soundness conditions need to be formulated in which some of the general soundness criteria are made more precise, further specified, or otherwise amended for application in particular communicative activity types. An authority argument, for instance, is to meet more objective and more precisely defined requirements in a scientific discussion than in an informal chat between friends. Because of the

⁸⁰ Referring to Woods and Walton (1989, pp. 15–24) and van Eemeren and Grootendorst (1992a, pp. 136–137), van Eemeren (2010) cites, for example, the following general criteria for judging authority arguments: the authority referred to should have indeed the professed authority, the authority's judgment should be recognized as pertinent to the topic at issue in the difference of opinion, the parties in the difference of opinion should in principle agree on appealing to the authority in the discussion, and the authority should be quoted correctly and at a point where this is relevant (pp. 202–203).

possible variation in the specific soundness criteria that are to be used in implementing the general soundness criteria in different communicative activity types, fallacy judgments are, in the last resort, always contextual judgments.

In the various communicative activity types, different implementations of the general soundness criteria may be called for in order to ensure that the institutional point of the communicative activity type can be optimally realized. In the pragma-dialectical view, it is therefore necessary to examine systematically for all general soundness criteria pertaining to a certain mode of strategic maneuvering whether they need to be made more precise, further specified, or otherwise amended, so as to yield specific soundness criteria that will do justice to the macro-contextual requirements⁸¹ – and, if so, in exactly which way. Doing so may result in the articulation of distinct sets of specific soundness criteria, each of them appropriate to being applied in a particular communicative activity type. A somewhat different set of specific soundness criteria may, for example, be appropriate to judging strategic maneuvering by authority argumentation in a criminal trial than to judging strategic maneuvering by authority argumentation in a scholarly paper.

The specific soundness criteria for strategic maneuvering that play a role in judging the soundness or fallaciousness of argumentative moves are, in principle, explicitly agreed upon between the parties at the opening stage of the discussion. In argumentative reality, however, such an agreement is more often than not only assumed implicitly. In a great many communicative activity types, agreements about such procedural starting points are already wholly or partly given when the parties engage in the argumentative practice concerned. For formalized communicative activity types, such as a civil lawsuit, these starting points are taught to the participants during secondary socialization in their professional training; for informal communicative activity types, such as a chat with a friend, they are for the most part conveyed to them during primary socialization, when they grow up.

10.11 Qualitative Empirical Research of Argumentative Reality

Empirical research investigating argumentative discourse from the point of view of the pragma-dialectical theory of argumentation relates directly to the management of differences of opinion. The qualitative empirical research that will be discussed in this section examines, from the theoretical perspective of a critical discussion, specific manifestations of argumentative discourse in argumentative reality. In [Sect. 10.12](#) we shall discuss quantitative empirical research starting from the same theoretical perspective, in which general characteristics of argumentative discourse are examined experimentally. Qualitative research may be undertaken for its own sake, but often it is carried out in preparation of (experimental) quantitative research.

⁸¹ In some cases it might be necessary to supplement the general criteria with specific criteria that are only relevant in a particular institutional macro-context.

So far, the qualitative research conducted in pragma-dialectics has focused primarily on the way in which argumentative moves that are relevant for a critical discussion manifest themselves in argumentative reality and the clues that the way they are presented provides for their reconstruction. As it stands, the pragma-dialectical theory offers in the first place a normative model for conducting a critical discussion. For carrying out empirical research starting from a pragma-dialectical perspective, certain elaborations and adjustments of the theoretical framework are therefore needed to clarify its relationship with argumentative reality. We shall mention some of them in reporting about the qualitative research.

To avoid confusion between the empirical level and the theoretical level in dealing with argumentative discourse, van Eemeren and Grootendorst (2004) make a distinction between the *interpretive relevance* that is at the empirical level attributed to argumentative moves by participants in the discourse, on the one hand, and the *analytic relevance* and *evaluative relevance* that are in a pragma-dialectical analysis and evaluation assigned to argumentative moves from the theoretical perspective of a critical discussion, on the other (pp. 69–73).⁸² In dealing with argumentative moves, interpretive, analytic, and evaluative relevance are all pertinent, but they do not always coincide. To tackle the problems involved in determining the interpretive, analytic, and evaluative relevance of argumentative moves in argumentative discourse more easily, van Eemeren and Grootendorst propose a taxonomy in which all three types of relevance are differentiated along the following dimensions: (1) the *discourse component* whose relevance is considered (e.g., the propositional content of a standpoint), (2) the *contextual domain* in the discourse demarcating the scope of the relevance considered (e.g., the confrontation stage), and (3) the *relational respect* with regard to which the relevance is considered (e.g., the pertinence of a reason for the acceptability of a standpoint) (2004, pp. 80–83).

In *Reconstructing Argumentative Discourse*, their monograph on the analysis of argumentative discussions and texts, van Eemeren et al. (1993) emphasize that the reconstruction of argumentative moves that are deemed relevant should always be faithful to the commitments that may be ascribed to the arguers concerned on the basis of their contributions to the discourse. Qualitative empirical research into the way in which in specific argumentative practices oral and written argumentative discourse is conducted can improve our pragmatic insight into how this requirement can be met. By revealing, for instance, a standard pattern of confrontation, van Eemeren, Grootendorst, Jackson, and Jacobs have shown that qualitative research enables us to make theoretically pertinent claims concerning the content, function, and structure of argumentative exchanges that are empirically grounded. Their grounding comes from ethnographic evidence and comparative information about the conventional structures of discourse and the strategies that are employed. In cases of dialogue, reflexively organized cues as to how the participants themselves

⁸² Note that an argumentative move that is relevant in any of these three senses is not necessarily a successful move in the sense of being effective.

understand what is going on in the discourse, such as pauses, fillers (“uh”), cutoffs, and restarts, are another source of empirical evidence. As the qualitative research reported in *Reconstructing Argumentative Discourse* makes clear, none of these empirical sources for the justification of a reconstruction works alone, and they all need to be handled with a trained analytic intuition and cultural knowledge of the communicative activity type concerned.

In *Analysing Complex Argumentation*, Snoeck Henkemans (1992) has made a contribution to theoretically minded qualitative research by showing with the help of empirical observation that the various argumentation structures distinguished in the pragma-dialectical theory result from differently oriented dialogical exchanges aimed at resolving a difference of opinion. In *coordinative argumentation*, for instance, an attempt is made to remove the opponent’s doubt or criticism concerning the sufficiency of the argumentation by advancing one or more additional arguments. In a direct defense, the coordinative argumentation is *cumulative*; in an indirect defense responding to (potential) criticism, it is *complementary*. Complementary coordinative argumentation.⁸³ In both types of coordinative argumentation, the arguments are interdependent. In *multiple argumentation* on the other hand, the arguments advanced in defense of the same standpoint are independent: they are separate attempts to defend the standpoint. In an argumentative exchange, one argument put forward in a multiple argumentation may be motivated by the failure or the potential failure of another one. Snoeck Henkemans identifies three kinds of clues that can be instrumental in reconstructing the argumentation structure: “pragmatic” clues in the way the arguer has presented the standpoint that is defended, “dialogical” clues in reference to criticism that is made, and “dialectical” clues following from the procedural norms of critical discussion that the arguer is assumed to observe.

In the comprehensive Indicator Project, about which they report in *Argumentative Indicators in Discourse*, van Eemeren et al. (2007) set out to examine the clues for reconstructing argumentative moves systematically with the help of qualitative empirical research. The central goals of this research were to identify the words and expressions that arguers use to indicate the functions of the various moves they make in an argumentative discourse, to classify these moves in accordance with the argumentative functions they can have in the various stages of the resolution process, and to determine under which conditions they fulfill these functions. The indicators of the functions of argumentative moves that are examined include the way in which the moves are presented, the way in which the other party responds to them, and the way in which the first party reacts to these responses.

In identifying the analytically relevant moves they are interested in, van Eemeren, Houtlosser, and Snoeck Henkemans use the model of a critical discussion as their frame of reference. However, not every potential contribution to the critical testing process is specified in the model. In the opening stage, for example, the discussants have to come to an agreement about their material and procedural starting points, but it

⁸³ Cf. Pinto and Blair’s (1989) distinction between cumulative and complementary “premise sets.”

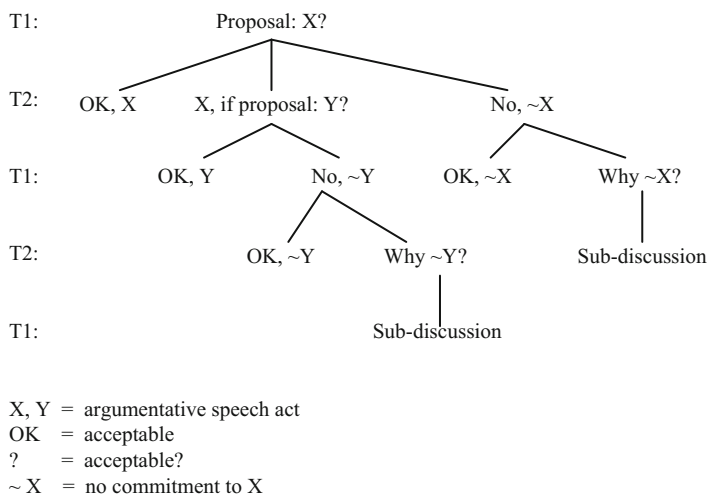


Fig. 10.7 Dialectical core profile for establishing a starting point

is not specified which moves exactly they have to make to come to such an agreement. Therefore, the authors make use of “dialectical profiles,” which specify the kinds of moves that can be instrumental in realizing the specific tasks of the discussants at a particular point in a particular stage of the discussion and the “dialectical routes” in which these moves are included.⁸⁴ The dialectical routes are the specifications of the various series of analytically relevant moves that can be made in the part of the argumentative exchange portrayed in a dialectical profile.

Van Eemeren and Houtlosser (2007) define the normative concept of a *dialectical profile* as an overview of the sequential patterns of moves (dialectical routes) that discussants at a certain stage or substage of a critical discussion are entitled (or obliged) to make to resolve a difference of opinion on the merits. In qualitative empirical research, a dialectical profile can be used as a heuristic design for capturing the argumentative moves that are analytically relevant – i.e., potentially relevant to resolving the difference of opinion – at a particular point in a particular stage of a discussion and then identifying the expressions indicative of these moves.⁸⁵ By way of example, in Fig. 10.7, the dialectical core profile for establishing a starting point is pictured.

The party, T1, who starts the deliberation in the opening stage can only make one move – although in different ways – to open the dialogue: suggest to the other party,

⁸⁴ The dialectical profiles are inspired by the profiles of dialogue developed by Walton and Krabbe (Walton 1999, p. 53; Krabbe 2002). Cf. van Eemeren et al. (2010).

⁸⁵ Dialectical profiles can also have a heuristic role in the analysis of strategic maneuvering. Because every dialectical move specified in a dialectical profile allows for rhetorical exploitation, the dialectical profile is an appropriate starting point for identifying the ways of strategic maneuvering the arguers can deploy to steer the critical resolution process into their own direction.

T2, that they should accept a certain proposition, X, as a shared starting point for the discussion. T2 can respond not only in different ways but also by using different types of moves. The core profile in Fig. 10.7 shows what these moves are and what the possible follow-ups might be. T2 can respond by accepting T1's proposal to regard X as a shared starting point or by rejecting it. In the latter case, T1 can accept the rejection or ask T2 for clarification. In the former case, T2 can either accept T1's proposal right away or impose restrictions on the acceptance specifically that T1 should accept another proposition, Y, as a starting point for the discussion as well.⁸⁶ In the follow-up T1 can either accept those restrictions or not accept them by either accepting Y as starting point or not accepting Y as a starting point. In case of a rejection, T2 can ask for clarification. After T1's request for clarification upon T2's rejection of X, as well as after T2's request for clarification after T1 has rejected Y, a sub-discussion may ensue about the other party's rejection to accept either X or Y as a starting point.

Taking the relevant dialectical profiles as their point of departure, van Eemeren, Houtlosser, and Snoeck Henkemans (2007) examine by means of qualitative empirical research systematically the ways in which argumentative moves are realized in argumentative reality. Their first general observation concerning potential indicators of argumentative moves is that, in practice, not every argumentative move is necessarily accompanied by an indicator, let alone an unambiguous one.

Starting from a dialectical profile portraying the dialectical routes that can be chosen in defending a standpoint against criticism, the authors identified, for instance, expressions a protagonist can use to indicate that doubt concerning a reason already given is not justified, such as "while," "whereas," "not even," and "and yet." Indicators such as "while" and "whereas" can be easily combined with expressions such as "otherwise" or "normally." This happens in particular when arguers in defending a particular judgment or qualification need to take into account that their opponent might come up with criticisms such as "But does your argument really justify that judgment?" or "Is what you mention in your argument not always or normally the case, so that the reason you mention cannot justify that there is something special (i.e., negative or positive) about the case?" By indicating that "otherwise" things would have gone differently or that "normally" something would not have been the case, they can make clear that the potential objections

⁸⁶ It is primarily for efficiency reasons that the profile allows the dialogue about the acceptance of Y to be part of the dialogue about the acceptance of X. This inclusion allows for cases in which the acceptance of Y by T1 has consequences for the argumentative value of X, that is to say, imposes restrictions on the argumentative use that T1 can make of Y in support of his standpoint. If it could not become clear as early as in the opening stage of the discussion that the acceptance of Y had these consequences, it could happen that T1 and T2 run through the whole discussion about the acceptability of T1's standpoint and agree in the concluding stage that T1 is allowed to maintain his standpoint on the basis of the support he has provided with the use of X, while it would have been clear all the time that if T2 could have proposed Y as a starting point and T1 had accepted Y as such, T1's support for his standpoint would have been overruled by an attack by T2 on the basis of Y, and T1 would therefore not be allowed to maintain his standpoint.

against the reason that was first given do not hold and that the positive or negative judgment is justified.

The following argument is an example of this use of “whereas” in combination with “otherwise”:

I wrote a letter to the administrative council, saying I can’t tell you how much I appreciate the stipend. It has allowed me to dedicate so much of my time to SG, whereas otherwise I would have worked a campus job to pay the bills. (www.studentleader.com/sal_r.htm)

In this example, a student defends the standpoint that his stipend has been a great help because it has allowed him to dedicate a lot of time to the student government. A critical opponent might wonder: “But couldn’t you have devoted that time to student government without the stipend?” The arguer makes clear that this criticism does not hold, because then he would have had to take a campus job to pay the bills and that would have interfered with his involvement in extracurricular activities.

Pragma-dialectical insights have not only been brought to bear in examining the way in which argumentative moves manifest themselves in argumentative reality and the clues their presentation provides for the reconstruction but also in qualitative empirical research concentrating on specific argumentative contexts, specific argumentative phenomena, and specific cases of argumentative discourse. Van Rees, for one, has explored in several qualitative empirical studies (van Rees 1989, 1992a) the applicability of the pragma-dialectical theory to the context of problem-solving discussions.⁸⁷ She observes in her research that the purposes of this genre of discourse are sufficiently in accordance with the purposes of a critical discussion⁸⁸ to warrant a pragma-dialectical reconstruction (van Rees 1992b). Her research also makes clear that the actual reconstruction of problem-solving discussions in terms of a critical discussion can be accounted for pragmatically with the help of insights from speech act theory, discourse analysis, and conversation analysis (van Rees 1994a, b, 1995a).

The theoretical framework of pragma-dialectics has also been instrumental in qualitative empirical research concerning the interpretation of the function of certain stylistic and other presentational phenomena which can be found regularly in argumentative discourse, such as *repetition* (van Rees 1995b). Recently, Snoeck Henkemans has taken the extended pragma-dialectical theory as a basis for qualitative empirical research concerning the role in strategic maneuvering of stylistic devices such as “metonymy,” “rhetorical questions,”⁸⁹ and *praeteritio*

⁸⁷ In addition, Verbiest (1987) describes from the same theoretical point of view how disputes arise in informal conversations. She shows that there is an important parallel between confrontation in conversations and the normative pragma-dialectical view of confrontation.

⁸⁸ Van Rees (1991) examines whether descriptive models for problem-solving discussions can be used to investigate the extent to which such discussions conform to the normative ideal.

⁸⁹ Earlier Slot (1993) discussed the problem of recognizing and interpreting rhetorical questions from a pragma-dialectical perspective.

(2005, 2009a, b, respectively).⁹⁰ In her monograph *Dissociation in Argumentative Discussions*, van Rees (2009) provides the first systematic treatment of the argumentative technique of “remodeling our conception of reality” known as *dissociation* (Perelman and Olbrechts-Tyteca 1969, p. 413). Unlike earlier monolectical approaches, her approach, starting from the model of a critical discussion, focuses on the use of dissociation in a dialectical context. Having first clarified the not very transparent notion of dissociation in a pragma-dialectical vein, she discusses a broad range of examples, making clear how dissociation can be used dialectically and rhetorically in all four stages of the process of resolving a difference of opinion. Van Rees also examines to which degree the use of dissociation can be considered a reasonable argumentative technique and what makes this technique effective.

Finally, the pragma-dialectical theory constitutes a basis for qualitative empirical research of particular specimens of argumentative discourse (“cases”). Van Rees, for instance, concludes her monograph on dissociation by demonstrating the merits of her approach with the help of a case study in which she discusses President Clinton’s dissociation of the term *sexual relationship* in his strategic maneuvering to get out of the Monicagate predicament (2009, pp. 123–139). Van Eemeren and Houtlosser regularly use case studies to show that the extended pragma-dialectical theory allows for a more profound and realistic analysis and evaluation of argumentative discourse than the standard approach. The treatment they have given in various publications of the “Shell case,” an advertorial published in international newspapers in which Shell defends its role in Nigeria after being blamed for the death of Ken Saro-Wiwa, is the most prominent of these illustrations (van Eemeren and Houtlosser 2002a, pp. 143–156; van Eemeren 2010, pp. 165–178, 182–186, 209–212).⁹¹

10.12 Quantitative Empirical Research of Argumentative Reality

Next to qualitative empirical research, pragma-dialecticians are since the mid-1980s engaged in quantitative empirical research of an experimental nature. The results of this research play an important role in establishing the necessary connection between the pragma-dialectical theory and argumentative reality and

⁹⁰ From the same theoretical perspective, Tseronis (2009) investigated in *Qualifying Standpoints* the strategic function of “stance adverbs” in qualifying standpoints as a presentational device in strategic maneuvering.

⁹¹ Other pragma-dialectical case studies include the analysis of some of J. R. Reynolds’s tobacco advertorials by van Eemeren and Houtlosser (2000a; van Eemeren 2010, pp. 20–21, 47–50); van Eemeren et al. (2011b); and the doctoral dissertations on the strategic use of dissociation and definitions defended at the University of Bucharest by Cosoreci Mazilu (2010), concentrating on the abortion debate, and Muraru (2010), concentrating on mediation and diplomatic discourse regarding the Camp David agreements. For a detailed illustration of the advantages of an “extended” analysis of a press release by KLM compared to a “standard” analysis, see van Eemeren et al. (2012c).

can be brought to bear in justifying the analytic reconstructions of argumentative discourse. The research concentrates in the first place on tracing general rules, routines, and tendencies in the way argumentative moves are identified and assessed by ordinary arguers.⁹² It therefore provides insight in the actual processing of argumentative discourse that is necessary for putting the critical ideal of pragma-dialectics in a realistic perspective and developing adequate methods for improving argumentative practices.

Quantitative empirical research that is closely related with the qualitative research, discussed in Sect. 10.11, regarding verbal indicators of argumentative moves has been carried out to establish to what extent the recognition of argumentative moves is in argumentative reality facilitated or hampered by factors in the presentation.⁹³ The results of experimental research concerning the speech act complex at the heart of argumentative discourse, i.e., argumentation, suggest that the ease of recognition is significantly facilitated by the presence of verbal indicators. Van Eemeren et al. (1984), in their research concerning presentational factors influencing the ease of recognition, systematically varied in the experimental messages that they used four of these factors: (a) *topic highly charged* or not, (b) *standpoint marked* or not, (c) *argumentation indicator present* or not, and (d) *standpoint preceding the argument* or following it.⁹⁴ Undergraduate students were requested to indicate whether or not a number of discourse fragments presented to them contained argumentation. They were to underline the argument if they thought this was indeed the case.

Two different replications of this research were carried out to examine the precise effects of the four factors that were manipulated (van Eemeren et al. 1985). The first replication was undertaken to countermand the “ceiling effects” in the previous test (the respondents’ overall identification scores were so high that differences between the impact of the various factors could not be registered). In the second replication, in which the messages were presented on a computer screen, a different instrument for measuring the dependent variable (i.e., recognition) was used. This time the analysis concentrated on decision times. The participants were asked to press as quickly as possible a “yes” button if they thought the discussion fragment presented contained indeed argumentation and a

⁹² Experimental pragma-dialectical empirical research concerning the production of argumentative moves (and texts) is still thin on the ground since it follows the development of the interpretation and evaluation research. See van Eemeren and Grootendorst (1999) for the pragma-dialectical (re)writing method.

⁹³ Most reports about this research were published in Dutch (e.g., van Eemeren et al. 1984, 1985, 1987, 1990). For publications in English, see van Eemeren et al. (1989) and van Eemeren et al. (2000).

⁹⁴ Van Eemeren et al. (1984) conducted first several feasibility studies to ensure that the respondents in the experiment understand “argumentation” in the intended way. In testing the suitability of their measuring instruments, they concentrated on “single” argumentation, in which just one reason in defense of a standpoint is articulated. The conceptual validity of their argumentation concept was proven by the fact that the items submitted to the respondents were in 95 % of the cases correctly identified as argumentation.

“no” button if they thought this was not the case. Of the four variables that were manipulated, the influence of the presence of argumentation indicators proved to be the strongest, especially of indicators “in the broader sense,” such as “owing to” and “on the basis of.” The absence of such indicators slowed down or hindered the identification of argumentation – in some cases even considerably. Only if no argumentation indicator was present did marking the standpoint facilitate the identification of argumentation.⁹⁵ In the other case, its indicative function was as it were overruled by the presence of the argumentation indicator. In a *retrogressive presentation* (“because”), with argumentation following the standpoint, identification turned out to be easier than in a *progressive presentation* (“therefore”), with the standpoint following the argumentation. A highly charged topic proved to be a factor without any significant effect.

To find out to what extent the identification of argumentation is an independent cognitive skill rather than being based on other intellectual skills such as “verbal comprehension” and “general reasoning,” van Eemeren et al. (1989) examined whether 14-year-olds in a Dutch secondary school could recognize argumentation without having received any systematic instruction. After having been given an explanation of the concepts of “argumentation,” “reason,” and “standpoint,” a relatively large proportion of second formers in a lower stream of a comprehensive school could not identify single argumentation, whereas a large majority of third formers could.⁹⁶ Grasping the concept of argumentation is a “yes or no” matter, and the progress the young people made in identifying argumentation was considerably greater than that in verbal comprehension and general reasoning. Although related to other intellectual skills, identifying argumentation proved to be a relatively independent skill, which is developed in education.

Following up this research, the same authors paid attention to the clues the verbal presentation provides for the recognition of *indirect* argumentation. In the interpretation of indirect argumentation (and of implicit argumentation in general), *contextual indication* plays a major part by having a clarifying effect. According to van Eemeren and Grootendorst, the degree of conventionalization of the verbal presentation required for indirect speech acts to be interpreted properly is inversely proportional to the degree of definiteness of the context in which they occur (1992a, pp. 56–59). It is therefore to be expected that in an indefinite context implicit and indirect argumentation is more difficult to recognize than explicit and direct argumentation. To test this hypothesis, van Eemeren et al. (1989) confronted the experimental subjects with fragments of discourse consisting of messages, half of which, in a “split-plot design,” were supplied with a well-defined context and half of which without such a context. Both contained direct arguments and indirect arguments, with or without an argumentation indicator. All well-defined contexts

⁹⁵ For experimental research concerning the role of standpoints preceding the argumentation in identifying argumentation, see Jungslager (1991).

⁹⁶ Students follow in Dutch secondary school education different programs (from vocational to academic) according to their general cognitive skills and achievements.

serving as (a level of) an independent variable were such that a literal interpretation of the fragment would be unsatisfactory. As expected, the communicative function of direct argumentation proved to be easier to recognize than that of indirect argumentation. In the latter case, the subjects needed some extra information in order to know that something more was meant than what was literally expressed. As the tests show, a well-defined context provides this information.⁹⁷

Van Eemeren et al. (1995) investigated the performance of students in identifying unexpressed premises and argument schemes.⁹⁸ The results of their tests clearly indicate that in the absence of disambiguating contextual information, unexpressed “major” premises and “non-syllogistic” premises are more often correctly identified than unexpressed “minor” premises.⁹⁹ As Garssen’s (1997) experiments have shown, causal argument schemes are more often correctly identified than symptomatic argumentation, but not more frequently than comparison argumentation. The sizable individual differences that were found in the identification of unexpressed premises and argument schemes are to a substantial degree correlated with school types, which indicates that they are related to differences in general cognitive capabilities.¹⁰⁰

The primary aim of Garssen’s (1997) study was to investigate to what extent ordinary arguers’ perceptions of the different types of relations between premises and standpoints correspond with the pragma-dialectical argument schemes. In a characterizing-categorizing study, the respondents had to group a number of specimens of argumentation and to characterize the relation between the arguments and the standpoints. In a critical response test, they had to react critically to arguments.¹⁰¹ The results of the tests make clear that the respondents had a very good understanding of comparison argumentation and a reasonably well-developed notion of causal argumentation, while their pre-theoretical notion of symptomatic argumentation was less developed.

After this experimental empirical research concerning the identification of argumentative moves by ordinary arguers, van Eemeren, Garssen, and Meuffels concentrated their efforts for more than 10 years on ordinary arguers’ assessment of argumentative moves. This has resulted in the comprehensive monograph *Fallacies and Judgments of Reasonableness* (van Eemeren et al. 2009). This study reports approximately 50 experiments in which the respondents were asked to give on a

⁹⁷ This result seems to confirm van Dijk and Kintsch’s (1983) contention that in determining the communicative function (“force”) of verbal utterances, language users take refuge in “linguistic strategies.” All nonlinguistic factors Clark (1979) mentions as affecting the interpretation of indirect speech acts are incorporated in a well-defined context.

⁹⁸ For experimental research concerning the identification of “nonmixed” and “mixed” differences of opinion, see Koetsenruijter (1993).

⁹⁹ Experimental research carried out by Gerritsen (1999) indicates that clarified versions of argumentation with an unexpressed premise were better appreciated by the respondents only if the original versions were for them indeed difficult to understand.

¹⁰⁰ See for the measurement of argumentative skills also Oostdam (1991).

¹⁰¹ This research is reported in English in Garssen (2002).

seven-point scale, ranging from “very unreasonable” (= 1) to “very reasonable” (= 7) their verdict about the reasonableness or unreasonableness of the last argumentative move performed in experimental discussion fragments that were presented to them, which contained both fallacious and non-fallacious moves.¹⁰² In this way, 24 different types of fallacies were examined which constitute violations, spread over all four discussion stages, of rules for critical discussion: the Freedom Rule (Rule 1), the Obligation to Defend Rule (Rule 2), the Argument Scheme Rule (Rule 8), and the Concluding Rule (Rule 9).¹⁰³ The general aim of the tests was to check to what extent ordinary arguers judge the reasonableness of argumentative moves according to norms that match the norms expressed in the rules for critical discussion. An overview of some of the most important findings is provided in Fig. 10.8.

On the basis of the strikingly consistent results summarized in Fig. 10.8, it can be concluded that ordinary arguers judge the fallacies included in the tests as unreasonable discussion moves,¹⁰⁴ while the non-fallacious argumentation with which they were contrasted was found to be reasonable to very reasonable, time and time again.¹⁰⁵ Unlike their problem-solving validity, the conventional validity of the rules for critical discussion is an empirical matter depending on their intersubjective validity.¹⁰⁶ In what sense do the results of this empirical project give indications for the degree of intersubjective validity of the discussion rules for the confrontation stage, the opening stage, the argumentation stage, and the concluding stage investigated in this study?

In order to answer this question, van Eemeren et al. (2009) make use of the quantitative notion of *effect size*, which indicates how strongly the respondents discriminate between the unreasonableness and reasonableness of a certain fallacy and its non-fallacious counterpart. The larger the effect size, the stronger the

¹⁰² This means, for example, that next to cases of abusive *argumentum ad hominem* the test included also sound personal attacks and that other fallacies were in a similar way “accompanied” by representations of their sound counterparts.

¹⁰³ In a number of cases, a replication study was carried out – sometimes to support interpretations, sometimes to exclude alternative explanations, and, in doing so guaranteeing the internal validity, sometimes to optimize the external validity.

¹⁰⁴ The only exceptional case is the tu quoque variant of the *argumentum ad hominem*.

¹⁰⁵ Going by the absolute size of the empirical averages obtained, there is a considerable variation as to the extent to which the fallacies studied are found unreasonable. A practical didactic implication is that, since it is now clear which are obviously the least complicated cases, these cases should in an introductory course on fallacies be dealt with first and the more complicated cases later.

¹⁰⁶ According to van Eemeren (2010), the intersubjective validity of the rules for critical discussion, which is to lend the pragma-dialectical discussion procedure conventional validity, is likely to be based primarily on their problem-solving validity, i.e., their instrumentality in resolving a difference of opinion on the merits. One may surmise that the rules will be acceptable to people who are like members of Popper’s Open Society in the sense that they are antidogmatic, antiauthoritarian, and anti-foundationalist and reject monopolies of knowledge, pretensions of infallibility, and appeals to unfaltering principles.

	Fallacious argumentation	Sound argumentation
1. <i>argumentum ad hominem</i> (abusive variant)	2.91 (0.64)	5.29 (0.64)
2. <i>argumentum ad hominem</i> (circumstantial variant)	3.89 (0.57)	5.29 (0.64)
3. <i>argumentum ad hominem</i> (<i>tu quoque</i> variant)	4.45 (0.59)	5.29 (0.64)
4. <i>argumentum ad baculum</i> (physical variant)	2.04 (0.80)	5.64 (0.39)
5. <i>argumentum ad baculum</i> (non-physical variant)	2.91 (0.64)	5.64 (0.39)
6. <i>argumentum ad baculum</i> (direct variant)	1.86 (0.66)	5.41 (0.62)
7. <i>argumentum ad baculum</i> (indirect variant)	3.72 (0.83)	5.41 (0.62)
8. <i>argumentum ad misericordiam</i>	3.86 (0.53)	5.06 (0.42)
9. fallacy of declaring a standpoint taboo	2.79 (0.66)	5.14 (0.47)
10. fallacy of declaring a standpoint sacrosanct	2.68 (0.68)	5.67 (0.40)
11. fallacy of shifting the burden of proof (non-mixed difference of opinion)	2.37 (0.89)	4.51 (0.67)
12. fallacy of evading the burden of proof (non-mixed difference of opinion) by introducing the standpoint as something entirely matter-of-course	3.04 (0.72)	4.68 (0.87)
13. fallacy of evading the burden of proof (non-mixed difference of opinion) by personally guaranteeing the rightness of the standpoint		
- via a promise	3.29 (0.99)	5.18 (0.18)
- via a directive	2.77 (0.75)	5.14 (0.92)
14. fallacy of evading the burden of proof (non-mixed difference of opinion) by immunizing the standpoint against criticism via hermetical-essentialistic formulations	2.93 (0.96)	4.76 (0.88)
15. fallacy of evading the burden of proof (mixed difference of opinion)		
regarding standpoints without presumptive status	2.72 (0.81)	5.68 (0.55)
regarding standpoints with presumptive status (truth candidate)	3.45 (0.98)	5.68 (0.55)
regarding standpoints with presumptive status (changes/revisions)	3.48 (1.16)	5.68 (0.55)
16. <i>argumentum ad consequentiam</i>		
logical variant	3.92 (0.74)	4.39 (0.64)
pragmatic variant	2.96 (0.70)	5.03 (0.63)
17. <i>argumentum ad populum</i>	2.77 (0.80)	5.88 (0.73)
18. fallacy of the slippery slope	3.31 (0.78)	5.31 (0.66)
19. fallacy of false analogy	3.14 (0.70)	4.74 (0.83)
20. <i>argumentum ad ignorantiam</i>	2.56 (0.71)	5.56 (0.56)

Fig. 10.8 Overview of average reasonableness scores for fallacies (“fallacious argumentation”) and their non-fallacious counterparts (“sound argumentation”) (1 = very unreasonable; 4 = neither unreasonable nor reasonable; 7 = very reasonable), with standard deviations in parentheses

discrimination, and the other way around: the smaller the effect size, the weaker the discrimination. In a relative sense, the larger the effect size, the more the claim to conventional validity is substantiated. The general conclusions which can be deduced from the (median and average values of the) effect sizes in this research project are that the discussion rules concerned are, generally speaking, to quite a high degree intersubjectively valid and that the differences in degree of intersubjective validity between the rules that were investigated are by no means spectacular (van Eemeren et al. 2009, pp. 222–224). The general conclusion of the research

project therefore is that all data that are obtained indicate that the norms that ordinary arguers use when judging the reasonableness of contributions to the discussion correspond quite well with the pragma-dialectical norms for critical discussion. So, based on this indirect evidence, the rules may be claimed to be conventionally valid, taken individually and as a group.¹⁰⁷

The introduction of the theoretical notion of strategic maneuvering in the extended pragma-dialectical theory of argumentation opens up new venues for empirical research into the relationship between the arguers' aiming for rhetorical effectiveness and complying with dialectical standards of reasonableness. For three theoretically motivated hypotheses which are vital to starting this kind of empirical research,¹⁰⁸ van Eemeren et al. (2012a) have shown in "Effectiveness through reasonableness" that they are strongly supported by pertinent empirical data. We shall discuss these hypotheses briefly.

First, ordinary arguers are to a certain extent *aware of what their dialectical obligations involve*, because they generally know which contributions to a discussion are to be considered reasonable and which contributions unreasonable. If they were not aware of any standards of reasonableness, there could not be any rational relationship between aiming for effectiveness and maintaining reasonableness in their strategic maneuvering. In giving their judgments on reasonableness, ordinary arguers prove to use standards which agree strongly with the norms incorporated in the rules for critical discussion (see Fig. 10.8). The fact that they are committed to standards of reasonableness equivalent with the pragma-dialectical standards makes it possible to substantiate what reasonableness means to them.

Second, ordinary arguers assume that in principle the other party in the discussion will be committed to *the same kind of dialectical obligations as they are*. If they did not start from this assumption, it would be pointless for them to appeal to the other party's standards of reasonableness by putting forward argumentation they consider to justify their standpoint. The fact that they assume that there are shared standards of reasonableness makes it possible to connect their standards of reasonableness with their aiming for effectiveness vis-à-vis the other party.

Third, ordinary arguers prefer – and assume that their interlocutors prefer – that contributions to the discussion that do not comply with supposedly shared standards for critical discussion will be regarded as unreasonable and that those who offend these standards *can be held accountable for being unreasonable*. If they did not wish the prevailing standards to be put into effect, their argumentative efforts would be pointless. The fact that arguers turn out to give a prescriptive meaning to reasonableness when taking part in argumentative practices, and expect their interlocutors to do the same, makes it possible to interpret the connection between

¹⁰⁷ It is worth noting that in the study the confrontation stage and the opening stage have been studied exhaustively in this regard.

¹⁰⁸ The three hypotheses are closely connected with the theoretical views on the relationship between argumentation and effectiveness in the sense of convincingness that were expounded in van Eemeren and Grootendorst (1984).

reasonableness and effectiveness in such a way that reasonableness may, in principle, be expected to lead to effectiveness – even if in a particular communicative practice (or in certain kinds of communicative practices) reasonableness would not be the only factor (and not even the biggest factor) which brings about effectiveness. Correlatively, if reasonableness is lacking or deficient, effectiveness may be expected to suffer.

Against this background it makes sense for argumentation theorists to examine the relationship between reasonableness and effectiveness empirically, covering all stages of the resolution process and taking account of all aspects of strategic maneuvering. In this empirical research, “effectiveness” is to be defined as realizing the “inherent” interactional (*perlocutionary*) effect that is conventionally aimed for by performing the speech act by which the argumentative move concerned is made (van Eemeren and Grootendorst 1984, pp. 24–29). In order to serve its purposes optimally, pragma-dialectical effectiveness research is to concentrate on the pursuit of intended and externalizable effects of strategic maneuvering on the state of the addressee’s dialectical commitments.¹⁰⁹ It will focus in the first place on effects achieved by reasonable means that depend on rational considerations on the part of the addressee, starting from an adequate understanding of the functional rationale of the argumentative moves.¹¹⁰ Steering the research into this direction agrees with the view of reasonableness as a necessary condition for *convincingness* – the rational version of persuasiveness (van Eemeren and Grootendorst 1984, p. 48).¹¹¹

In light of the finding that discussion moves that are from an argumentation-theoretical perspective fallacious are judged unreasonable by ordinary language users, it might seem remarkable that when such moves occur in argumentative discourse, many times the fallacies appear not to be noticed by the participants. A striking example is the abusive variant of the *argumentum ad hominem*. When rating the reasonableness of clear cases of this fallacy in an experimental situation, ordinary arguers overwhelmingly judge the use of this fallacy to be a very unreasonable discussion move (see Fig. 10.8). In real-life argumentative discourse, however, this fallacy remains in a great many cases undetected. Such striking discrepancies need to be explained.

¹⁰⁹ This type of effectiveness research is a critically inspired pragma-dialectical complement to the prevailing (non-dialectical) persuasion research. The pragma-dialectical preference for the label “effectiveness research” rather than “persuasiveness research” is in the first place motivated by the fact that the term *effectiveness* is, unlike the term *persuasiveness*, not exclusively connected with the argumentation stage but pertains also to argumentative moves made in other discussion stages, such as proposing starting points in the opening stage and stating the outcome of the discussion in the concluding stage.

¹¹⁰ See the analysis of “interactional” (*perlocutionary*) effects in van Eemeren and Grootendorst (1984, pp. 63–74) and van Eemeren (2010, pp. 36–39).

¹¹¹ In line with this research tradition, Amjarso (2010) tackled the question of whether in the context of a monologue simply mentioning arguments in support of a standpoint is more effective than also mentioning and refuting anticipated counterarguments.

In “The disguised abusive *ad hominem* empirically investigated,” van Eemeren et al. (2012b) argue that in certain cases the *abusive ad hominem* can be analyzed as a special form of strategic maneuvering in which this fallacy takes on a reasonable appearance because it mimics legitimate critical reactions to authority argumentation. When co-arguers present themselves wrongfully as experts in a certain field or claim to be trustworthy when in fact they are not, it is perfectly reasonable to attack them personally about that. As a consequence of such special cases, it may not always be immediately clear whether a personal attack must be seen as reasonable critique or as a fallacious *ad hominem* move. In two experiments van Eemeren, Garssen, and Meuffels tested systematically the hypothesis that abusive *ad hominem* attacks are seen as substantially less unreasonable when they are presented as if they are critical reactions to authority argumentation in which the person attacked parades as an authority. The hypothesis was confirmed in both experiments.¹¹²

10.13 Applications to Specific Communicative Domains

In the wake of the inclusion of strategic maneuvering, the incorporation of the contextual dimension of the communicative activity types in the theorizing strengthened considerably the connection between the pragma-dialectical theory and the study of argumentative reality. This theoretical enrichment has led to the application of pragma-dialectical insights to the analysis and evaluation of argumentative discourse in a great many argumentative practices spread over a variety of communicative domains. The research carried out at the University of Amsterdam has concentrated primarily on four domains.¹¹³ Next to examining argumentative discourse in the legal domain, which is in Amsterdam an established tradition, the focus is also on the political, the medical, and the academic domains. The general aims of the research are in all cases (1) to find out in which ways in these domains the possibilities for strategic maneuvering are determined by extrinsic institutional constraints stemming from the conventionalization of the various communicative activity types and (2) to detect which regular argumentative patterns of more or less fixed constellations of argument schemes and argumentation structures in support of a certain type of standpoint are stereotypically activated in these domains to realize the institutional point of the communicative activity types concerned in agreement with their institutional conventionalization.

¹¹² Both in the original test and in the replication carried out to be better able to generalize the results, straightforward abusive attacks are consistently rejected as unreasonable discussion moves, and legitimate personal attacks are invariably considered reasonable. The “disguised” abusive attacks presented as responses to an abuse of authority however are judged as substantially less unreasonable than the overtly fallacious direct attacks.

¹¹³ In addition, a fruitful collaboration was realized with researchers of the University of Lugano who concentrate on argumentation in mediation, editorial meetings, financial communication, and health communication.

10.13.1 The Legal Domain

Argumentation theorists generally consider the legal domain as the institutional context in which the critical ideal of reasonable argumentation preeminently takes shape. Characteristically, the communicative practices in this context are highly conventionalized. In the communicative activity types in this domain, the procedural and material starting points defining the legal counterpart of the opening stage of a critical discussion are, generally, to a large extent predetermined institutionally rather than determined by the parties in mutual deliberation. In order to identify the extrinsic institutional constraints motivating the institutional preconditions for strategic maneuvering in these communicative activity types, pragma-dialecticians examine first how these communicative activity types can be characterized argumentatively. Next they try to establish how the parties involved in the various kinds of legal practices, including the judge, operate in conducting their argumentative discourse in accordance with the available room for strategic maneuvering.

The pragma-dialectical study of legal argumentation has been given shape by Feteris. In *Fundamentals of Legal Argumentation*, she provided, from a pragma-dialectical perspective, a general overview of the various approaches to legal argumentation (Feteris 1999). In a number of other publications, she expressed her views on various theoretical issues. Initially, her studies focused on argumentative discourse within the legal system of the Netherlands and were reported in Dutch. In her doctoral dissertation, for instance, she investigated the extent to which the regulation of Dutch legal practices in civil and criminal law is in agreement with the rules for critical discussion (Feteris 1989). She demonstrated how deviations from these rules can be explained by specific requirements of the judicial process. Among the other topics Feteris examined, one finds the use of pragmatic argumentation referring to the desirable (or undesirable) consequences of a legal decision (Feteris 2002). More recently, she has been concentrating on the examination of strategic maneuvering in legal discourse (Feteris 2009). In this research, she shows how judges can maneuver strategically in justifying a decision in which they deviate from the literal meaning of a legal rule by referring to the purpose of the rule that can be inferred from the intention of the legislator. As a case in point, she analyzes and evaluates the judge's argumentation in the famous Holy Trinity case on the basis of a reconstruction of the burden of proof and the available room for strategic maneuvering.

Another argumentation scholar actively engaged in pragma-dialectical research of legal discourse is Kloosterhuis. His doctoral dissertation (in Dutch) focused on the analysis of analogy argumentation used by a judge to interpret or construct a legal rule (Kloosterhuis 2002). In *Reconstructing Interpretative Argumentation in Legal Decisions*, Kloosterhuis (2006) provides tools for reconstructing the standpoints at issue in a legal case, establishes a framework for the analysis and evaluation of argumentation in legal decisions, and revisits the issue of analyzing and evaluating analogy argumentation. Other pragma-dialectical contributions to the examination of legal argumentation are made by Plug (2000b), who discusses (in Dutch) the reconstruction of the argumentation structures employed in the

justification of judicial decisions,¹¹⁴ and Jansen (2003), who reconstructs (in Dutch) a *contrario* reasoning to create a set of instruments for the evaluation of “classic” and “modern” variants of this judicial argument scheme.¹¹⁵ These studies are part of the theoretical background against which current pragma-dialectical research concerning the institutional constraints on strategic maneuvering in argumentative discourse in a legal context is conducted.

10.13.2 The Political Domain

Pragma-dialectical research concerning the political domain was initiated by van Eemeren’s (2002) discussion of the role of argumentation in democracy. Democracy will work in his view only if adequate procedures can be developed for public discourse, allowing for a methodical critical discussion between protagonists of the various – often conflicting – viewpoints. According to van Eemeren, due attention needs to be paid to the *higher-order conditions* for having a critical discussion: the requirements concerning the attitudes and competences of the participants and the sociopolitical circumstances.

In 2009, van Eemeren and Garssen have started a comprehensive research project to examine the institutional preconditions for strategic maneuvering in argumentative exchanges in the European Parliament.¹¹⁶ So far, they have concentrated on the impact of a secondary precondition silently imposed upon Members of the European Parliament (MEPs) which they call *the European predicament*: they are expected to serve the European cause and to satisfy at the same time their electorate by protecting the national interests of their home countries (van Eemeren and Garssen 2010, 2011). As van Eemeren and Garssen show, this predicament leads, for instance, to the occurrence of a regular pattern in the responses of MEPs when a policy is proposed that they consider disadvantageous to their home country. As the parliamentary debate on banning the growth of tobacco makes clear, this stereotypical pattern is characterized by the use of subordinative argumentation from examples in support of a negative standpoint regarding a proposal, specifying the countries (not just the MEPs own home countries!) that would suffer if the policy were to be realized.

Based on the extended pragma-dialectical theory, van Eemeren and Houtlosser instigated at the beginning of the twenty-first century a comprehensive research project concerning the influence of institutional constraints on confrontational strategic maneuvering in the political domain, carried out together with a team of

¹¹⁴ See Plug (1999, 2000a, 2002) for a discussion in English of some of the problems involved.

¹¹⁵ For a discussion in English of the use of a *contrario* reasoning in legal argumentation, see Jansen (2005).

¹¹⁶ Other pragma-dialectical research projects focus, for instance, on the peculiarities of argumentative discourse in Dutch Parliament (Plug 2010, 2011) and the use of pragmatic argumentation in lawmaking debates in British Parliament (Ihnen Jory 2010; 2012). See also Iețcu-Fairclough (2009).

young researchers, including van Laar, Tonnard, Mohammed, and Andone. An overview of some of the main results, accompanied by related studies by other pragma-dialectical researchers and by researchers who take other theoretical perspectives, is published in *Examining Argumentation in Context* (van Eemeren 2009). Earlier van Laar (2008) had already reported about his contribution to the project, for instance, in his essay “Pragmatic inconsistency and credibility,” published in *Controversy and Confrontation* (van Eemeren and Garssen 2008).

The contributions of the younger members of the team consist in the first place of doctoral dissertations. In *Getting an issue on the table*, Tonnard (2011) gives an account of presentational tactics used by “one-issue” politicians in Dutch parliamentary debate to get the priority issue of their party discussed even when it is not on the agenda – thus showing their electorate that they really care about the issue. Tonnard makes clear that some of the politicians’ tactical devices can be characterized as “topic-shifting,” others as “polarizing.” In the empirical part of her study, she focuses on efforts made by the leader of the Party for the Animals to initiate a discussion on “animal and environmental welfare” and by the leader of the Party for Freedom to discuss “Islamization.”

In *The Honourable Gentleman Should Make Up His Mind*, Mohammed (2009) concentrates on the communicative activity type of Prime Minister’s Question Time in the British House of Commons. She examines responses by the Prime Minister to critical questions by oppositional Members of Parliament concerning the government’s policies, actions, or plans in which he accuses the questioner of an inconsistency. Mohammed characterizes this accusation as confrontational strategic maneuvering in an unofficial discussion about whether a party can provide good leadership which is for institutional reasons incorporated in the official discussion about whether the government’s performance is up to standard. The communicative activity type of Prime Minister’s Question Time thus becomes multilayered. The strategic function of the Prime Minister’s accusation of inconsistency is to make clear that the MPs should retract their criticism because it is inconsistent with other proclaimed views of their party – and an inconsistent opposition cannot provide good leadership. Mohammed also formulates soundness conditions for distinguishing between sound and fallacious accusations of inconsistency.¹¹⁷

In *Maneuvering strategically in a political interview*, Andone (2010) sets out to provide an argumentative explanation for the way in which politicians react in political interviews on television to the interviewer’s accusation that they have taken on a standpoint which is inconsistent with a standpoint they have advanced earlier. In the institutional context of British democracy, politicians are accountable to the electorate for their political words and deeds, and it is the interviewer’s task to assess these words and deeds critically and to demand a satisfactory explanation on behalf of the public. In her study, Andone shows that rephrasing one of the standpoints can be a “compensating adjustment” enabling the politician to continue the discussion even if the inconsistency seems undeniable. She distinguishes three

¹¹⁷ A revised version of Andone’s dissertation was published as a monograph (Andone 2013).

patterns that this strategic maneuver can have.¹¹⁸ To conclude, she formulates soundness conditions for a response to an accusation of inconsistency that consists of a withdrawal of the original standpoint by rephrasing it.

In another doctoral research project devoted to the political domain, Lewiński (2010) examines how online technologies create new possibilities for public debate. One of the most crucial features of online discussions is the almost unlimited opportunity to react critically: they allow for an unhampered stream of critical reactions, advanced by discussants that can use pseudonyms and drop out of the discussion whenever they like. In *Internet political discussion forums as an argumentative activity type*, Lewiński focuses on how the contextual conditions of political discussion forums on the Internet affect the way in which the participants react critically. Through an analysis of some longer discussion fragments, he identifies four frequently returning patterns of strategic maneuvering in critical reactions. The main rhetorical factor underlying these four patterns is the strategic use of the burden of proof: discussants try to minimize their opponents' chances of winning the discussion by extending the opponent's burden of proof.

10.13.3 The Medical Domain

In the medical domain, too, strategic maneuvering is needed to comply with institutional conventions. In the “post *informed consent* era,” doctors are under the obligation to make clear to patients who come for a consultation that their judgment and advice are sound (Snoeck Henkemans 2011).¹¹⁹ Because in medical consultation the participants differ as a rule considerably in relevant (medical) knowledge and experience, in analyzing the doctors' strategic maneuvering, special attention needs to be paid to analyzing the way in which they dialectically and rhetorically exploit their authority.¹²⁰ In a pragma-dialectical vein, G. Thomas Goodnight and Pilgram (2011) have shown that doctors can build up the patient's trust by enhancing *ethos* through stressing their expertise. Their analysis serves as a basis to formulate specific soundness conditions for a context-sensitive evaluation of the doctors' strategic maneuvers.

Strategic maneuvering also takes place in advertisements – especially in America – in which medical drugs are promoted. Within the conceptual framework of pragma-dialectics, van Poppel and Sara Rubinelli (2011) have traced potential

¹¹⁸ These patterns involve rephrasing the original standpoint in a way that (1) makes the politician's support of the position at issue dependent on the fulfillment of certain specific conditions, (2) makes clear that the interviewer's interpretation that there is an inconsistency is based on a misunderstanding, and (3) enables the politician to claim that the original standpoint concerned something else than the present standpoint (Andone 2010, pp. 88–89).

¹¹⁹ See Labrie (2012).

¹²⁰ Both Pilgram at the University of Amsterdam and Labrie at the University of Lugano are engaged in doctoral research from a pragma-dialectical perspective concerning the use of authority in doctor-patient consultation.

flaws in argumentation about the efficacy of medicines advertised directly to consumers.¹²¹ The main problem is that in direct-to-consumer advertising arguments support the link between the use of the drug and the improvement of the health condition without giving due account of unsuccessful uses of the drug or the possibility that other drugs can help as well. Such strategic maneuvering often goes against the institutional preconditions imposed upon the argumentative discourse in this type of advertising by the Food and Drug Administration. Concentrating on so-called health brochures aimed at getting a certain target audience to eat less, to exercise more, or to act in other ways that promote good health, van Poppel (2011) examines the peculiarities of strategic maneuvering by means of the use of pragmatic argumentation, which is stereotypical for this communicative activity type.¹²²

10.13.4 The Academic Domain

According to Gábor Kutrovátz (2008), the realm of scientific argumentation is an obvious field of application for pragma-dialectics. In his view, analyzing scientific argumentative discourse can be of great help to understanding the “dynamics of knowledge production” (p. 209, 244). By giving a reconstruction of some vital elements of analytic overviews of argumentative discourses from the Newton-Lucas correspondence, Zemplén (2008) provides a case in point. Pragma-dialectical research directed at determining the institutional constraints an academic context imposes on the strategic maneuvering taking place in argumentative discourse is still in its infancy.¹²³ In a first effort to adapt the theoretical instruments of pragma-dialectics for implementation in this type of research, Wagemans (2011) proposes tools for the reconstruction and evaluation of argumentation from expert opinion by incorporating certain suggestions for critical questions made by Walton into the more general and systematic pragma-dialectical framework.

10.14 Critical Responses to the Pragma-dialectical Theory

In carrying out their ambitious research program, the pragma-dialecticians have met not only praise and approval but also criticism and objections. In an essay in which he differentiates between the “Pragma-Dialectical theory of argumentation”

¹²¹ In her doctoral research at the University of Amsterdam, Wierda focuses on the use of authority argumentation in medical advertising.

¹²² The use of pragmatic argumentation in health brochures was also the topic of van Poppel’s (2013) doctoral research at the University of Amsterdam.

¹²³ Aimed at contributing to this project is Poppa’s doctoral research concerning “thought experiments” at the University of Amsterdam.

discussed in this chapter and “a pragma-dialectical approach,”¹²⁴ J. Anthony Blair (2006) nicely illustrates how virtually every aspect of the pragma-dialectical theory can be (and often has become) a bone of contention. As stands to reason, the critical responses that have been advanced almost invariably start from the critic’s own views of argumentation and the way argumentation theory is to develop. Unlike pragma-dialecticians, some scholars – as a rule starting from English usage – seem to consider the terms *argumentation* and *argument* as virtually synonymous. They tend to give “argumentation” a broader meaning than using argument to convince others in a reasonable way of the acceptability of a standpoint. As a consequence, they also tend to have a different view of the desired scope of argumentation theory than the pragma-dialecticians. Usually they want its scope to be wider and more diffuse, but there are also critics who want it to be narrower and more specific. Next to having an eye for the peculiarities of scholarly competition, understanding these basic differences between the starting points seems to us the crux of appreciating a great many of the criticisms.

In discussing the criticisms, we first mention some comments regarding the dialectical and pragmatic dimensions of the pragma-dialectical theory.¹²⁵ Next we concentrate on critics who argue for an extension of the scope of the theorizing because they think something is lacking in pragma-dialectics. Then we pay attention to critical responses pertaining to the rhetorical dimension of the theory, including some criticisms of its moral quality. Subsequently we concentrate on criticisms regarding the pragma-dialectical treatment of the fallacies. In closing this chapter, we turn to critics who want to concentrate on how argumentation theory can deal with epistemic claims – thus narrowing the scope of the theorizing.

As a preliminary it should be noted that Christopher Tindale (1999, p. 47) has correctly observed that regularly the criticisms of the pragma-dialectical approach are based on a misunderstanding of the theory. He mentions, for instance, the mistaken belief that the pragma-dialectical perspective is concerned “only with verbal dialogue” in the sense of dialogues conducted orally.¹²⁶ In other cases, too, critics sometimes give interpretations of the theory that are certainly not intended by the pragma-dialecticians. It happens also often that critics advance criticisms on some part of the pragma-dialectical theory while not being aware of other parts of the theory pertinent to an adequate appreciation of the point they are criticizing. All

¹²⁴ Dissociating “a pragma-dialectical approach” to argumentation from “pragma-dialectics” as the theoretical enterprise of those who have coined the term is in our view just as awkward as it would be to dissociate “a new rhetoric approach” to argumentation from the “new rhetoric” of Perelman and Olbrechts-Tyteca. The term *normative pragmatics*, which van Eemeren (1986, 1990) introduced as a general label, is a more suitable starting point for further differentiations.

¹²⁵ This discussion of criticisms is based on van Eemeren (2012).

¹²⁶ In a review of Johnson’s (2000) *Manifest Rationality*, van Rees (2001) signals and corrects a whole series of misunderstandings of pragma-dialectics; that it is concerned only with spoken and not with written arguments being just one of them and that it is concerned only with dialogic and not with monolectical discourse another one.

the same, most responses to pragma-dialectics have been constructive. Only very few of them seem to amount to an outright rejection.¹²⁷

10.14.1 The Dialectical and Pragmatic Dimensions

Defining both dialectic and pragmatic in ways different from how they are defined in pragma-dialectics, Harald Wohlrapp judges the theory neither enough dialectic nor enough pragmatic (2009, pp. 41–42).¹²⁸ Maurice Finocchiaro (2006), on the other hand, characterizes the pragma-dialectical approach as “hyper dialectical”: Every argument is viewed as a means to overcome some form of doubt or criticism. In this hyper dialectical view, Johnson’s (2000) “dialectical tier” is both necessary and sufficient to have an argument. Johnson’s (logical) “illative tier” is in pragma-dialectics integrated in the dialectical whole (p. 57). According to Finocchiaro, the analyses carried out by the pragma-dialecticians undeniably support their theory that all arguments conform to the hyper dialectical conception. Whether they are indeed “better and more enlightening” than other analyses still needs to be shown (p. 56).

Hans V. Hansen (2003) observes that in pragma-dialectics the dialectical rule for the burden of proof (Obligation to Defend Rule) has a purely methodological status and that there seems to be no role for presumptions. In a response, Houtlosser (2003) points out that there is no need to add a rule stating that “If *p* is part of the common starting points, then presumptively *p*,” because even without such a rule these starting points function as presumptions. In van Eemeren and Houtlosser’s (2002b, 2003a) view, presumption rests with everything that is part of the pragmatic status quo, so that the agreed-upon starting points determining the interactional relationship between the parties have in fact a similar function as presumptions.

In “Pragma-dialectic’s appropriation of speech act theory,” Fred J. Kauffeld (2006) discusses the pragmatic dimension of pragma-dialectics.¹²⁹ In van Eemeren and Grootendorst’s view, speech act theory needed to be amended considerably, and Kauffeld acknowledges that in their theory a “very serious modification of Searle’s views” has been made (2006, p. 151). In his opinion, however, on the matter of whether illocutionary acts are constituted by conventions the pragma-dialecticians “do not go far enough” (2006, p. 152). According to Kauffeld, their definition of conventions as dependent on regularity, expectation, and preference obscures that there are two distinct routes arguers can take in incurring normative

¹²⁷ Woods (2006) seems a case in point, but in other publications (e.g., Woods 2004) this critic’s conclusions are in the end more positive.

¹²⁸ According to Wohlrapp (2009, p. 41), linguistic pragmatics is insufficient and Popper hardly understood anything of dialectic (2009, p. 41). Wohlrapp also regrets that pragma-dialectics does not account for differences of “frames” (but see van Eemeren 2010, pp. 126–127).

¹²⁹ Bermejo-Luque (2011, pp. 58–72) also tackles the pragmatic dimension of pragma-dialectics, but Andone (2012) points out the weaknesses of Bermejo-Luque’s claims.

commitments: by conforming, in agreement with a procedural necessity, to practices which are mutually agreeable because they solve communication and interaction problems (as the pragma-dialecticians have in mind) but also by undertaking commitments “to generate presumptions which provide addressees with reason to act in ways which are desired by the speaker” (2006, p. 159). Unfortunately, it is not really clear to us what the latter point involves and how it affects the pragma-dialectical view.

10.14.2 Extensions of the Scope

Some authors urging for extensions of the scope of the theorizing emphasize that in practice argumentation – or argument¹³⁰ – can also have other functions than resolving a difference of opinion on the merits (e.g., Goodwin 1999; Garver 2000, p. 307; Hampe 2003, p. 465). They are right, of course, that argumentation may play a part in realizing other goals, and the pragma-dialecticians have always acknowledged this. However, the question is to what extent these other functions need to be taken into account in a theory of argumentation. The answer to this question depends not only on whether the scope of argumentation theory is defined as resolving differences of opinion on the merits or in some broader way but also on whether the other goals that are pursued are inherent in argumentation, may go together with advancing argumentation, are parasitic on argumentation, or are perhaps only incidentally connected with argumentation.

Similar issues of scope and inclusion arise concerning the role that emotion and cognition play in argumentative discourse. Michael A. Gilbert (2005), who promotes “coalescent arguing,” would like pragma-dialectics to move closer toward consensualism. He argues that the pragma-dialectical model is susceptible to the required interpretation in emotional terms, provided that certain changes are made.¹³¹ Dale Hampe also thinks that more systematic research needs to be done regarding the “emotional trajectory of arguing” (2003, p. 463). He agrees with Gilbert (1997) that coalescent arguing acknowledges the other’s goals in a constructive manner (p. 445). According to Hampe, a “climate” may be cooperative, and lead to coalescent arguing, or competitive, and lead to threats and eristic

¹³⁰ As her discussion of the Gulf Debate in American Congress makes clear, Goodwin (1999) uses the term *argumentation* in the general sense of “argument.” Her tentative definition of argumentation as “showing” that a standpoint is acceptable and her reference to the terms *demonstrare* and *apodeixis*, which are associated with logical proof, confirm this reading. Goodwin emphasizes that some politicians who advanced “argumentation” in Congress said explicitly that they did not want to convince and mentions “explaining” as one of the functions of “argumentation,” but in the pragma-dialectical usage “explaining” is a different function of “argument” than “argumentation.”

¹³¹ Gilbert suggests “moving away from the abstract to the actual, from the ideal to the real” (2001, p. 7). Although he presents this as a “continuation” of van Eemeren and Houtlosser’s inclusion of the rhetorical dimension of argumentation, what he seems to have in mind is something different: to continue by considering certain terminological and conceptual categories of pragma-dialectics merely as heuristic distinctions.

arguing. In his view, most conflicts involve a mix of motives and hold out the possibility of “either competitive or cooperative behaviors” (2003, p. 453). This either-or division goes against the pragma-dialectical view that the resolution of differences of opinion involves in principle, to put it bluntly, a bit of both. Hampe also draws attention to social and psychological factors that play a part in the production and reception of ordinary argumentation (2003, p. 465). Referring to the pragma-dialectical principle of externalization (Hampe 2007),¹³² he concludes that pragma-dialecticians are not interested in such factors. This conclusion is drawn too hastily, since this does not follow from the aforementioned principle and the understanding of argumentative moves has in fact been a focus of attention in pragma-dialectical empirical research (e.g., van Eemeren et al. 1989).

According to Daniel Bonevac (2003), pragma-dialectics is dynamic, context-sensitive, and multi-agent and takes the construction of a theory of fallacies as an explicit goal, but some fruitful new directions can be suggested in which pragma-dialectics might develop. He points out that in defending a position against a variety of opponents, as often happens in a political context, a number of constraints must be met. Van Rees (2003) responds that this problem is dealt with in pragma-dialectics by considering such cases as differences of opinion with more than one antagonist, so that the protagonist is at the same time involved in more than one discussion. In response to Bonevac’s suggestion to construe fallacies as defeasible arguments relying on reasonable default principles but applied in circumstances in which there are undercutting or overriding considerations, van Rees explains that these considerations are taken up in the critical questions associated with the pragma-dialectical Argument Scheme Rule (especially when these questions are adapted to the requirements of specific communicative activity types). She confirms that the pragma-dialecticians agree with Bonevac that to implement the general norms incorporated in the rules for critical discussion, precise criteria need to be formulated for the various fallacies.

10.14.3 The Rhetorical Dimension of Pragma-dialectics and Its Moral Quality

A complaint Christian Kock (2007) issues against pragma-dialectics and other approaches to argumentation making use of insights from rhetoric is that they do not

¹³² The principle of externalization promotes concentrating on traceable commitments in the analysis and evaluation“ of argumentative discourse (see Sect. 10.3). Application of this principle also creates an appropriate starting point for the examination of the cognitive processes involved in the production, perception, and appreciation of these commitments. For methodological reasons, pragma-dialecticians are reluctant to amalgamate argumentation theory completely with psychology, sociology, epistemology, communication theory, or any other discipline belonging to its intellectual resources.

recognize that rhetoric is essentially about deliberation on policy options.¹³³ Pragma-dialectics, however, takes explicitly into account that argumentation may pertain to “practical” standpoints involving choices of action between two or more alternatives. The theory is designed to apply equally to argumentative discourse about descriptive standpoints involving a claim to epistemic acceptability, evaluative standpoints involving moral or aesthetic judgments, and prescriptive standpoints pertaining to action choices. Since rhetorical insights can be put to good use in all these cases, the scope of rhetoric is in the pragma-dialectical view not limited to the genre of deliberation and is therefore wider than Kock seems to think necessary.

Another complaint, voiced by Hanns Hohmann (2002, p. 41) but felt more broadly by rhetoricians, is that by adopting the pragma-dialectical approach, rhetoric may become the “handmaiden” of dialectic. However, far from subsuming all of rhetoric, in pragma-dialectics insights from rhetoric are only used in so far as they are of help in the analysis and evaluation of strategic maneuvering. The scope of rhetoric is, of course, much broader, and utilizing certain rhetorical insights for this specific purpose in a dialectical framework of analysis leaves rhetoric as such untouched. The independent status of rhetoric as a discipline is just as little affected by it as the integrity of mathematics is affected by the use of mathematical insights in physics, economics, and other disciplines.

In line with the rhetorical interest in *vir bonus* and “civil society,” David A. Frank (2004) connects argumentation with “moral action” (p. 267). He calls pragma-dialectics “hostile to the rhetorical tradition” (p. 278).¹³⁴ In a more constructive vein, Matthew Gerber (2011) criticizes “ethical deficiencies” in “rationalist” approaches to argumentation such as pragma-dialectics and suggests a “corrective” based on the theories of American pragmatists such as Dewey. In his view, “pragma-dialectical methodology potentially runs the risks of amorality” (p. 22), such as the advocacy of “undemocratic goals” (p. 25), because “arguments

¹³³ In spite of the fact that generally rhetoricians themselves associate rhetoric primarily with aiming for effectiveness (see van Eemeren 2010, pp. 66–80), Kock (2007) criticizes the tendency among argumentation theorists to define “rhetorical” argumentation in this way. Arguers “speaking for opposite choices,” he also observes, are not “obliged” to resolve their difference of opinion. However, if they aim to convince others of their position, their argumentation must be aimed at resolving a difference of opinion with the audience they want to convince (which need not necessarily coincide with the opponents they address). Kock ignores that choosing from different options involves expressing a preference for a certain decision and that political argumentation is as a rule aimed at convincing others of the preferred option.

¹³⁴ In a moralistic essay, in which he claims that Perelman “recognized the defining characteristic of totalitarian thought: the absolute commitment to the ‘cold logic’ of deductive reasoning” (p. 270), Frank (2004) reacts in the first place to criticisms in the handbook *Fundamentals of argumentation theory* (van Eemeren et al. 1996) and its predecessors of some aspects of Perelman and Olbrechts-Tyteca’s new rhetoric.

are deemed ‘good’ as long as they meet the goals of the speaker, regardless of what these goals or purposes may be” (p. 22).¹³⁵

10.14.4 The Treatment of the Fallacies

The theoretical approach to the fallacies proposed in pragma-dialectics was warmly welcomed by Douglas Walton, who considered the new conception of the fallacies “light years ahead” of the idea of seeming validity adhered to in the Standard Treatment (1992a, p. 265). According to Walton (1991b), the pragma-dialectical approach was the first big step to serious research concerning the fallacies.¹³⁶ Next to applause, however, there were also serious criticisms. Some of them deserve closer inspection.

In discussing the criticisms, we start from David Botting’s observation that “we can compare one system of rules against another according to their problem-validity, i.e., their capacity to prevent fallacies” (2010, p. 432). As for problem-validity (or “problem-solving validity”), the pragma-dialecticians have contrasted their treatment of the fallacies with the “Standard Treatment” and the Woods-Walton approach (van Eemeren 2010, pp. 190–192). As for conventional validity – an additional requirement for practical application of the theory that Botting does not mention – they have determined by means of experimental research to what extent the standards of reasonableness incorporated in their rules are in agreement with the judgments of ordinary arguers, because conventional validity depends on intersubjective acceptability (van Eemeren et al. 2009).¹³⁷

Since the fallacies examined in the Standard Treatment are discussed there precisely because they are clear cases of faulty argumentation, it stands to reason

¹³⁵ Leaving aside the wrong description of their soundness standard, and the fact that pragma-dialecticians in fact actively promote the democratic cause (e.g., van Eemeren 2002, 2010, pp. 2–4), the use of “good” is misleading, because pragma-dialecticians, being argumentation theorists, concentrate explicitly and exclusively on the argumentative quality (“soundness”) of advocacy, not on other qualities “good” may refer to.

¹³⁶ In a more critical vein, Walton (2007) plays down the empirical scope of the pragma-dialectical theory by portraying a “critical discussion” as just one of the many dialogue types (or communicative activity types) used in argumentative reality, thus ignoring its status of a theoretical construct applying to all of them. See for the scope of pragma-dialectics, e.g., van Eemeren (Ed., 2009), and for a critical response to Walton, Garssen (2009, pp. 187–188).

¹³⁷ Van Eemeren (2010) summarizes the pragma-dialectical position regarding the two dimensions of validity: “Granting that ‘conventional validity’ based in intersubjective agreement is indeed a prerequisite for reaching a conclusive judgment concerning the acceptability of argumentative moves, I would like to emphasize that, because of its overriding importance, determining their ‘problem-solving validity’ should come first” (p. 137). In agreement with this hierarchy, Tindale reaches in his discussion of the criticisms against pragma-dialectics eventually also the conclusion that “it is these rules (or the observance of them) which guarantee the reasonableness of the proceedings. So perhaps all along we have only needed to recognize these rules as the necessary objective conditions” (1999, p. 61). “The rules should have priority over the agreement of the discussants,” he acknowledges (p. 62).

that in some way or the other they will also be dealt with in pragma-dialectics, just as pertinent analytic observations and proposals for criteria for deciding about fallaciousness discussed in other approaches may be expected to return.¹³⁸ To achieve its aim of covering all fallacies that are impediments to resolving a difference of opinion on the merits, in the pragma-dialectical approach, all relevant fallacies distinguished traditionally (such as those discussed in Hamblin 1970) need to be treated, and all relevant theoretical insights available (such as those discussed in Woods and Walton 1989) need to be taken into account.

Against this background, the objections are to be valued which have been advanced against the pragma-dialectical theory of fallacies by John Woods. In *The Death of Argument*, Woods (2004) calls pragma-dialectics “a widely reputed theory that has some distinctive things to say about the fallacies” (p. 151) and devotes three chapters to a comparison of the Woods-Walton perspective on the fallacies and van Eemeren and Grootendorst’s “rival” perspective (2004, p. 149). Woods recognizes from the start the crucial importance van Eemeren and Grootendorst assign to the requirement of problem-solving validity, involving that the rules of conflict-resolution be “rationally satisfying rules” and that “the arguments accepted by the parties be good arguments, and those they reject be bad” (2004, p. 158).¹³⁹ His objections concern some of the starting points of the pragma-dialectical theorizing.

According to Woods (1991), the pragma-dialecticians blur the distinction between separate fallacies because they point out that different fallacies belong to the same category if they involve violations of one and the same standard, i.e., discussion rule, of the various standards of reasonableness pertaining to a critical discussion.¹⁴⁰ He does not acknowledge that, because they are recognized as different kinds of violations of a discussion rule, the fallacies concerned remain in fact just as separate as they were in the Standard Treatment (where all fallacies are in fact viewed as violations of one and the same standard of reasonableness – logical validity – and some of them are seen as belonging to a broader category of fallacies, such as the “fallacies of relevance”). The distinction between fallacies

¹³⁸ This answers Tindale’s observation that, “in the shift to the new concept,” the pragma-dialecticians “appear to bring the old criteria of the traditional fallacies with them” (1999, p. 55).

¹³⁹ Tindale (1999), who reaches on several points conclusions which do justice to the pragma-dialectical position, also recognizes the importance of problem-solving validity. It is indeed hard to imagine how one could embark on examining the fallacies from a normative perspective without having some kind of “etic” approach, involving external critical norms, because in an “emic” approach argumentative moves which are acceptable to the participants in the discussion do not require any further reflection as to their possible “fallaciousness.” See van Eemeren et al. (1993, pp. 50–51).

¹⁴⁰ As a case in point, Woods (2004) claims erroneously that “the *pragma-dialectical* construal makes of *ad baculum*, *ad hominem* and *ad misericordiam* [...] the same fallacy” (p. 156). He also observes that this construal of the traditional fallacies provides “brief caricatures straight out of the Standard Treatment” (p. 159, pp. 178–179), without mentioning that van Eemeren and Grootendorst precisely aim to show that pragma-dialectics can, in principle, accommodate the fallacies distinguished in the Standard Treatment.

which are different kinds of violations of the same standard is not affected by the pragma-dialectical effort to provide a systematic overview of the ways they are related to each other from the viewpoint of resolving a difference of opinion on the merits.

Another bone of contention is the extent to which the various fallacies have an “objective” existence independent of any argumentation theory. Woods and Walton take the view, which Woods qualifies as “conceptual realism” (2004, p. 161), that the fallacies are already “out there” and are part of the arguer’s conceptual tool kit, so that they represent pre-theoretical categories. In van Eemeren and Grootendorst’s view, the different types of fallacies can be tracked down only within a theoretical perspective on argumentation in which – this is the pragma-dialectical perspective – hindrances of the process of resolving a difference of opinion on the merits are identified. In the pragma-dialectical view, the various kinds of fallacies represent in the first place theoretical categories, while they are a “concept-in-use” to Woods and Walton.

Woods does not think that fallacies are theoretical “in the same extreme way that quarks are” (2004, p. 168). In the end, his conclusion is that “van Eemeren and Grootendorst don’t think this either” (p. 168). He explains that the virtue of moderate theory dependency is twofold: “first, it allows for theoretical innovations that genuinely improve fallacy theory without at the same time losing sight of the things that are generally recognizable as fallacies, as the same things, more or less, that our theoretical forbears were wrestling with” (p. 170).

Next to their view of the conceptual status of the fallacies, Woods discusses van Eemeren and Grootendorst’s idea that it is worthwhile to aim for a “unified account” of the fallacies (2004, p. 155). Whereas van Eemeren and Grootendorst think that it is recommendable to approach all fallacies from the same perspective – in their case the perspective of resolving a difference of opinion on the merits – so that the rationale for calling an argumentative move fallacious is basically the same in all cases, Woods (2004, p. 175) refers to the “exemplar theory of concepts,” which has it that everyday concepts are represented by users by “separate descriptions of some of their exemplars” (p. 175, quoting Smith and Medin 1981, p. 23). Therefore, if this theory is correct for the concept-in-use fallacy, fallacy will not be a unitary concept (p. 175). In Woods’s opinion, “the disunification of the fallacies is nothing to complain of” (pp. 176–177). If the exemplary theory is indeed correct, it is “precisely as things should be” (p. 177). In his view, van Eemeren and Grootendorst’s unificationist’s effort is a response to the challenge “to displace fragmented concepts-in-use with theoretically powerful stipulations” (p. 177). In addition, van Eemeren and Grootendorst are taken to propose “that the loose fragments of the concept-in-use need not be altogether given up on,” but should be given, as they try to do in *Argumentation, Communication, and Fallacies* (van Eemeren and Grootendorst 1992a), “a place in the taxonomy of stipulative theory” (p. 177).

To the idea advanced by van Eemeren and Grootendorst that an approach such as Woods and Walton’s and pragma-dialectics can be to some extent combined, Woods responds that Woods and Walton’s treatments of the dialectical fallacies

might be thought “especially amenable to unification” (2004, p. 181). In that regard, he mentions that Walton’s (1991a) monograph on begging the question achieves, “if only somewhat modestly,” a unification with certain parts of pragma-dialectics “in ways that facilitate some of Walton’s own results” (p. 181). In his view, prospects are less encouraging, perhaps, for other fallacies. At any rate, “the more that WW [Woods-Walton] theories can be made to unify, one by one, with VEG [the van Eemeren and Grootendorst approach] the less it will be likely that the overall pattern of unification will be one-way” (p. 181).¹⁴¹

10.14.5 The Epistemic Dimension

Several critics have correctly observed that over the years certain (minor) changes have been made in the presentation of the theory, some having to do with theoretical developments, others with the wish to prevent misunderstandings. Examples of the latter are the occasional insertion, for clarity’s sake, of “solving” after “problem” in “problem-validity” and the addition of the qualification “on the merits” to “resolving a difference of opinion” (which is exactly what “resolving in a reasonable way” in pragma-dialectics means). As Zenker (2007a) and Botting (2010) correctly observe, the Ten Commandments are in later publications (including this volume) rephrased as “don’ts” to make the critical rationalist character of the pragma-dialectical discussion procedure more transparent.¹⁴² Contrary to what Zenker (2007b) suggests,¹⁴³ however, the reversal of the Validity Rule (now 7) and the Argument Scheme Rule (now 8) has nothing to do with distancing pragma-dialectics from “deductivism,” which was never part of pragma-dialectics (Groarke 1995).¹⁴⁴ This reversal reflects the fact that, methodically, checking the adequacy

¹⁴¹ Cummings (2005, p.178) reaches a negative judgment about pragma-dialectics based on the observations made by Woods. Striking in Wreen’s (1994) equally negative judgment are the basic assumptions that fallacies are intrinsically connected with inferences (whereas pragma-dialecticians put them in a broader communicative perspective) and have an objective ontological status (whereas pragma-dialecticians view them as impediments to resolving a difference of opinion on the merits whose identification depends on whether one shares this theoretical outlook on the discourse).

¹⁴² As Botting (2010) observes, from an epistemic perspective, critical discussion models “the critical rationalist procedure of conjecture and refutation” (p. 415).

¹⁴³ Zenker concludes from his inventory of the (very few) changes the pragma-dialectical rules have undergone in the course of time that the most important material change is “the acknowledgement of non-deductive forms of validity” (2007a, p. 1588). Lumer (2010) asserts that van Eemeren and Grootendorst “originally” proposed “only one type of argumentation, namely deductive argumentation” and “more recently” included “some further argument schemes” (p. 65), “as a way to explain and justify non-deductive arguments” (p. 66). In reality, van Eemeren and Grootendorst distinguish already since 1978 argument(ation) schemes (van Eemeren et al. 1978, p. 20), next to (deductive and nondeductive) logical argument forms (e.g., van Eemeren and Grootendorst 1984, pp. 66–67).

¹⁴⁴ Another critic who accuses pragma-dialectics of “some form of” deductivism is Kock (2003, p. 162).

of the use of argument schemes comes after checking whether the logical validity norm applies – and if the latter is indeed the case the former may even be superfluous.

In documenting the changes that have taken place in the pragma-dialectical rules between 1984 and 2004, Zenker (2007a) isolates the rules which, in his view, other argumentation theorists might also adhere to from the other rules. Strangely, he seems to think that commonly accepted rules do not need to be included in the pragma-dialectical system. In spite of the fact that he correctly traces the critical rationalist background of the pragma-dialectical philosophy of reasonableness, by identifying “the consensual part” [whatever he may mean by this] as “the *genuine* PD-part” (p. 1588), Zenker reinforces the mistaken belief that pragma-dialectics is a “consensualist” theory.¹⁴⁵

While acknowledging that van Eemeren and Grootendorst only claim that with their rules the whole range of classical fallacies can be analyzed in a systematic way, Zenker (2007b) observes that “the necessity of the 15 PD-rules is justified exclusively with respect to their fallacy detection potential” (“detection” is not the right word here since the pragma-dialectical claim only concerns *distinguishing* between sound and fallacious argumentative moves). His incoherent conclusion is that it is best “to doubt the claim that the PD-rules are necessary for the resolution of the difference of opinion.” When he states next that the pragma-dialectical rules are “at most” *sufficient*, one fears that he confuses necessary and sufficient conditions.¹⁴⁶

A basic misunderstanding complicating the discussion of the epistemic criticisms is that pragma-dialectic’s philosophical stance against “justificationism” would equal not allowing for justificatory argumentation in the sense of a positive defense of a standpoint (see Siegel and Biro 2010). However, from the beginning,

¹⁴⁵ Another critic who endorses this wrong characterization of pragma-dialectics is Lumer (2010). Botting (2010) indicates which basic characteristic of argumentative exchanges, captured in the model of a critical discussion, is probably the source of the consensualist misconception: a completed critical discussion “ends with consensus” (p. 416). However, in pragma-dialectics an unequivocal result of the process of resolving a difference of opinion is in a critical rationalist vein viewed as being only a temporary state of affairs in an ongoing flux of opinions. Unlike in consensualism, it does not represent a final point with a desired status, but a provisional outcome. See for a continuation of this discussion about the epistemic dimension of pragma-dialectics Lumer (2012) and Botting (2012).

¹⁴⁶ Oddly, Zenker (2007b) ends up calling satisfaction of the preliminary higher-order conditions “a further necessary condition” for resolving differences of opinion. Ignoring that the pragma-dialecticians were the ones drawing attention to these *preconditions* for a legitimate application of the rules for critical discussion in evaluating the reasonableness of argumentative discourse, he correctly remarks that the nonfulfillment of certain higher-order conditions can explain seemingly unreasonable behavior (see van Eemeren et al. 1993, pp. 30–35). Without considering how far argumentation theorists should go in extending the boundaries of their efforts, he reproaches the pragma-dialecticians for their “apparent laxness” in not specifying the higher-order conditions “precisely and exhaustively.” It is doubtful whether it is really a proper task for argumentation theorists to examine whether in practice the psychological and sociopolitical higher-order conditions have been fulfilled.

van Eemeren and Grootendorst have included both “pro” argumentation, aimed at justifying a standpoint, and “contra” argumentation, aimed at refuting a standpoint, in their treatment of argumentative discourse (see van Eemeren and Grootendorst 1984, pp. 39–46).¹⁴⁷ Their rejection of justificationism as a philosophy of reasonableness relates to the fact that – in a critical rationalist vein – they do not accept the need to assume that standpoints can be legitimized definitively. Standpoints can sometimes be defended to the full satisfaction of optimally critical discussion partners, but this does not mean that the discussion cannot be reopened on another occasion – by the same discussion partners or by others.

Basically, the criticisms concerning the epistemic dimension of pragma-dialectics boil down to the accusation that following the pragma-dialectical discussion procedure correctly may in some cases lead to the acceptance of standpoints that are epistemically not tenable¹⁴⁸ – which generally means that they are not to be considered true (Biro and Siegel 2006b, p. 7).¹⁴⁹ Leaving aside that it is sometimes hard to tell with certainty that a standpoint which is accepted is untrue,¹⁵⁰ this accusation misses the point. As argumentation theorists, pragma-dialecticians are out for the best method for resolving differences of opinion on the merits and determining whether the standpoints at issue are acceptable on reasonable grounds. This means that they want to develop adequate (“problem-solving valid”) testing procedures for checking the quality of the premises used in argumentative discourse and the way in which they are used in defending standpoints. When considering how they deal with argumentative reality, however, three crucial points need to be borne in mind.

First, in the pragma-dialectical view, argumentation theory is neither a theory of proof nor a general theory of reasoning or argument but a theory of using argument to convince others by a reasonable discussion of the acceptability of the standpoints at issue. This means that it is not enough that the premises and justificatory or refutatory force of the arguments that are used are in agreement with problem-solving valid acceptability tests if their validity is not intersubjectively agreed upon

¹⁴⁷ Notions such as “pro argumentation” and “justificatory force” are in pragma-dialectics understood in a dialectical fashion and acquire a non-justificationist meaning. See also Garssen and van Laar (2010, p. 134).

¹⁴⁸ In a paper marked by incomprehension, Lumer calls pragma-dialectics “a heterogeneous theory composed of unqualified and therefore unsatisfactory consensualism and an ill-conceived form of epistemic rationalism” (2010, p. 67). According to Lumer, pragma-dialectics relies on very problematic epistemologies, “namely Critical Rationalism and Dialogic Logic” (p. 67). However, “much could probably be improved by changing the epistemological basis of Pragma-Dialectics” (p. 58).

¹⁴⁹ A similar point is made by Wreen (1994, p. 300).

¹⁵⁰ Pragma-dialecticians, too, aim for the most rational outcome but leave room for the possibility that a definitive verdict about truth cannot be given in all cases because the necessary tools for doing so are lacking. In some cases we have to appeal to experts from the various disciplines, and if they cannot come to a unified verdict, we shall have to live with it. Some truths (e.g., non-flatness of the earth, global warming) were in limbo for some time. As Garssen and van Laar rightly ask (2010, p. 129): Who is to decide in such cases?

by those who have to decide on the outcome of the argumentative exchange, i.e., need to be convinced. Although a standpoint may remain true even if it is not accepted by anyone, getting the truth of a standpoint accepted by others who are in doubt is another matter.¹⁵¹

Second, in the pragma-dialectical view, argumentation and argumentation theory do not only pertain to standpoints which involve an epistemic claim to truth but also to standpoints involving acceptability claims of a somewhat different nature, such as evaluative standpoints expressing ethical or aesthetic judgments and prescriptive standpoints advocating the performance of a certain action or the choice of a certain policy option (cf. Gerber 2011; Kock 2007).¹⁵² This means that in the pragma-dialectical view a theory of argumentation needs to have a scope that extends beyond dealing with the truth-related issues which are the primary interest of epistemologists.¹⁵³

Third, argumentation theory is, in the pragma-dialectical view, neither a “positive,” fact-oriented branch of study like physics, chemistry, or history nor equivalent with pools of intellectual reflection like ethics, epistemology, rhetoric, or logic – however much some of them may have contributed to its development. In determining whether in argumentation a claim to truth has been successfully defended, these disciplines may have nevertheless a specific role to play. In evaluating an explicit or implicit argumentative exchange, it will often be necessary for this reason to rely at a certain point on knowledge and insight from outside the scope or “jurisdiction” of argumentation theory (see Garssen and van Laar 2010).

After a great deal of pondering, Biro and Siegel (2006b), who opt for an objectivist epistemic perspective on argument and argumentation, conclude that the pragma-dialectical and epistemic approaches “are best seen not as rivals, but as partners, each endeavouring to illuminate different, but equally important, aspects

¹⁵¹ In this perspective, the addressees and their procedural and material starting points are of vital importance to argumentation theory. Siegel and Biro (2010, p. 467) may regret it, and perhaps Tindale (1999, p. 57) too, but as a consequence of argumentation’s involving not just reasoning but also trying to convince others, besides reaching a “problem-solving valid” conclusion, intersubjective agreement needs to be aimed for – and this makes it necessary to reach agreement between the parties. A consequence may be that (exceptionally, we hope) in practice (unlike, in epistemics, we hope) “good” arguments and standpoints are eventually rejected and “bad” arguments and standpoints accepted. This happens on reasonable grounds, however, only if the arguers have complied with all the required testing procedures. A “better” result can only be achieved if first the problem-solving validity of the testing methods for establishing truth, and for carrying out the other critical tests, is improved and the tests are made acceptable to would-be discussants.

¹⁵² Although assignment of truth values to such standpoints is not excluded, the disputants are not in the first place out to establish their truth but to determine their acceptability on reasonable grounds.

¹⁵³ Siegel and Biro may claim that nothing in the epistemic view suggests that there cannot be arguments about moral, political, and legal matters (2010, p. 472), but the “justified beliefs” involved in dealing with evaluative and prescriptive issues can as a rule better be treated in terms of intersubjective acceptability than in terms of objective truth. Problem-solving validity and intersubjective validity have in pragma-dialectics a broader scope than these epistemologists seem to have in mind.

of the range of phenomena that a suitably broad, philosophically adequate theory of argumentation must address" (p. 10).¹⁵⁴ They think that if reasonableness is understood "in terms of the degree of warrant or justification afforded the conclusion/standpoint by the considerations advanced in its favor by one or both of the parties, then van Eemeren and Grootendorst's account is in fact an epistemic one and coincides with our own" (p. 5). In spite of possible differences in how in the two approaches such a claim is checked, Biro and Siegel's reservation that van Eemeren and Grootendorst would not favor this interpretation is unnecessary when it comes to standpoints which involve an epistemic claim.

Caricaturing pragma-dialectics, Siegel and Biro (2010) state that "the discussants may share, and rely on, unjustified beliefs, and they may accept, and use, problematic rules of inference and reasoning" (p. 458).¹⁵⁵ However, if problem-solving validity is properly understood, this is not possible, at least not if there is a better – i.e., more problem-solving valid – alternative available.¹⁵⁶ As Botting explains in response, starting points and rules are reasonable only if they have been subjected to critical tests and have passed these tests (2010, p. 423).¹⁵⁷ The mistake the epistemic theorists make, he says, is supposing that the propositions and types of inferences initially agreed upon drop out of the sky.¹⁵⁸ In response to the complaint that in pragma-dialectics the defense of standpoints is always relative to the starting points, he simply points out that this is a common rule in dialectical approaches: "Arguers can only establish their standpoint via propositions and inferences that the other participants are explicitly or implicitly committed to" (2010, p. 425).

¹⁵⁴ According to Biro and Siegel (2006b), the central difference between the two kinds of approaches lies in "the different ways they conceive of the role in argumentation and in argumentation theory of dispute resolution and epistemic seriousness, respectively" (p. 8). See also Biro and Siegel (2006a). We think however that the differences are a matter of how argumentation and argumentation theory are viewed rather than dispute resolution and epistemic "seriousness."

¹⁵⁵ See also Biro and Siegel (1992, p. 91).

¹⁵⁶ As Tindale (disapprovingly) observes: the whole pragma-dialectical program "has been set up to be resolution-oriented and not audience-oriented (dialectical and not rhetorical)" (1999, p. 63).

¹⁵⁷ Is it reasonable for participants to start from the best material and procedural starting points they have access to or only from starting points which epistemologists consider objectively true or valid? This is what the difference amounts to. As epistemologists, Biro and Siegel seem to be only interested in the assessment of argumentation by an external evaluator who judges the argumentation on "objective" grounds, independently of the particularities of the actual discussion in which it takes place and its intersubjective acceptability (see Siegel and Biro 2010, pp. 467–468). Apart from the question whether this is indeed a better view of what argumentation theory should be, the question arises to what extent in practice such an approach can lead to decisive results and is more suitable for dealing with argumentative discourse in the various communicative practices than the pragma-dialectical approach.

¹⁵⁸ Establishing the acceptability of starting points is, according to pragma-dialecticians, not a proper task of argumentation theorists if it involves more than checking whether they are on the "list" of jointly accepted starting points. However, because of the critical rationalist rationale of their theory, it is understood that their acceptability is to be established in a problem-solving valid way.

According to Garssen and van Laar (2010), the challenges of the objectivist epistemologists are based on incorrect assumptions. In response, they explain what “resolution” as a normative notion means (p. 124) and what the requirement of problem-solving validity for logical schemes and argument schemes (p. 128) – and, *mutatis mutandis*, for starting points – involves. In an insightful essay, Botting (2010) – not a pragma-dialectician himself – expresses the view that “critical discussion is an epistemically normative model” (p. 415). He claims that the norms of pragma-dialectics and epistemic norms are not only “not necessarily in conflict and even in collaboration [...] but the norms of pragma-dialectics have epistemic normativity inherently [...], which is to say that the rules put forward in pragma-dialectics (the Ten Commandments) are truth-conducive” (p. 414). In defending this claim, Botting follows the Popperian idea that corroborated hypotheses have more “truthlikeness” compared to less successful hypotheses (p. 137).¹⁵⁹ Whatever the defects of pragma-dialectics, he concludes, “they are not epistemological” (p. 414).

Conclusion

In conclusion, it can be said that the different kinds of critics of pragma-dialectics, depending on their own views of argumentation and argumentation theory, put forward different kinds of demands. Because these demands often point into different directions and sometimes even go against each other, it is hard – if not impossible – to reconcile them. On the one hand, there are those who, starting from a rhetorical or discourse analytic perspective, seem to value in the first place the internal “emic” requirement of intersubjective validity. On the other hand, there are those who, starting from an objectivist epistemic or logical perspective, seem to value in the first place the external “etic” requirement of problem-solving validity – i.e., the kind of problem-solving validity agreeing with their own theoretical perspective.¹⁶⁰ This division explains why the pragma-dialectical approach of examining argumentation aimed at convincing others of the acceptability of a standpoint on the merits by integrating the problem-solving and intersubjective dimensions of validity in one and the same theoretical framework cannot satisfy all demands. This approach is in fact bound to keep meeting with objections – both from those who would like to extend the scope of the theorizing and from those who would like to narrow it down.

¹⁵⁹ According to Botting, “there is a way of testing a system of rules, showing that the rules pass these tests is a good way of arguing for their acceptance, and acceptance is, in the long run, a reliable indicator of verisimilitude” (p. 432). In his view, “the Normative Claim that standpoints that have the unqualified consensus of all participants in the dispute will *generally* be epistemically sound should be construed in the same way” (p. 432).

¹⁶⁰ Interestingly, extremely different positions such as – *bien étonnés de se trouver ensemble* – Gerber’s and Frank’s pragmatic ethics and rhetorical moralism, on the one hand, and Biro and Siegel’s objectivist epistemics, on the other hand, have in common that they are out to include certain extrinsic requirements which, in the pragma-dialectical view, transcend argumentation and argumentation theory proper.

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11.1 Research on Argumentation in Artificial Intelligence

The study of artificial intelligence (AI) is in many ways connected with the study of argumentation. Though both fields have developed separately, the last 20 years have witnessed an increase of mutual influence and exchange of ideas. From this development, both fields stand to profit: argumentation theory providing a rich source of ideas that may be used in the computerization of theoretical and practical reasoning and of argumentative interaction, and artificial intelligence providing the systems for testing these ideas. In fact, combining argumentation theory with AI offers argumentation theory a laboratory for examining implementations of its rules and concepts.

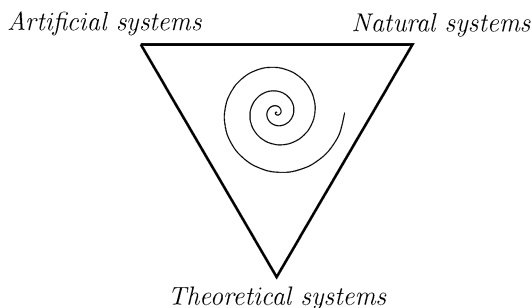
By their interdisciplinary nature, approaches to argumentation in AI integrate insights from different perspectives (see Fig. 11.1). In the theoretical systems perspective, the focus is on theoretical and formal models of argumentation, for instance, extending the long tradition of philosophical and formal logic. In the artificial systems perspective, the aim is to build computer programs that model or support argumentative tasks, for instance, in online dialogue games or in expert systems (computer programs that reproduce the reasoning of a professional expert, e.g., in the law or in medicine). The natural systems perspective helps to ground research by concentrating on argumentation in its natural form, for instance, in the human mind or in an actual debate.

Since the 1990s, the main areas of AI that have been of interest for argumentation theory are those of defeasible reasoning, multi-agent systems, and models of legal argumentation. A great many articles about these overlapping areas have appeared in journals in the realm of computation.¹ The biennial COMMA conference series focuses on the study of computational models of argument.²

¹ We mention a few of these journals: *Artificial Intelligence*, *Artificial Intelligence and Law*, *Autonomous Agents and Multi-Agent Systems*, *Computational Intelligence*, *International Journal of Cooperative Information Systems*, *International Journal of Human-Computer Studies*, *Journal of Logic and Computation*, and *The Knowledge Engineering Review*. Contributions have also been made to journals that deal primarily with argumentation, such as *Argumentation and Informal Logic*. A journal devoted explicitly to the interdisciplinary area of AI is *Argument and Computation*.

² The first COMMA conference was held in Liverpool in 2006, followed by conferences in Toulouse (2008), Desenzano del Garda (2010), and Vienna (2012). See <http://www.comma-conf.org/>. ArgMAS (Argumentation in Multi-Agent Systems) and CMNA (Computational Models of Natural Argument) are related workshops.

Fig. 11.1 Perspectives on argumentation



The impact of argumentation studies in the field of AI is illustrated by the fact that many of the best cited articles in the authoritative journal *Artificial Intelligence* are about argumentation.³

Research on argumentation in the field of AI often emphasizes formal and computational detail, sometimes making the papers concerned hardly accessible to a less formally or computationally oriented audience. In an attempt to disseminate AI's contribution to argumentation research, in this chapter, the focus is on the core ideas. This fits the feeling that progress in argumentation research can be accelerated by a cross-fertilization of ideas from different origins (see Fig. 11.1).

This chapter aims to be a starting point for the study of the contribution of artificial intelligence to argumentation research in general. As said, the focus is on the presentation of key ideas in the field, not on a representative description of all contributions by all contributors. The sheer scope and rapid growth of the field would make the latter impossible anyway.⁴

The first two sections that follow trace the historical roots of argumentation research in artificial intelligence, discussing work on non-monotonic logic (Sect. 11.2) and on defeasible reasoning (Sect. 11.3). Then follow a number of foundational topics in Sects. 11.4, 11.5, 11.6, and 11.7 on abstract argumentation, arguments with structure, argument schemes, and argumentation dialogues. In the Sects. 11.8, 11.9, 11.10, 11.11, 11.12 and 11.13 of this chapter, a number of specific topics are addressed that have been studied in AI approaches to argumentation: reasoning with rules, case-based reasoning, values and audiences, argumentation support software, burden of proof, evidence and argument strength, and applications and case studies.

³ Nine of the top twenty best cited articles in *Artificial Intelligence* since 2007 deal with argumentation, five of the top ten, and three of the top five. Source: Scopus.com, June 2012.

⁴ For a survey of the literature up till approximately 2002, we refer to the road map by Reed and Norman (2004a) and the more formally oriented overview by Prakken and Vreeswijk (2002). For more detail, including formal and computational elaboration, the interested reader may wish to consult the original sources referred to in this chapter. In addition, we refer to the collection of papers edited by Rahwan and Simari (Eds., 2009), which contains contributions by a great many researchers in the field of argumentation and artificial intelligence, and to the sources we mentioned in Notes 1 and 2. See also the special issue of the *Artificial Intelligence* journal edited by Bench-Capon and Dunne (2007).

11.2 Non-monotonic Logic

Today many artificial intelligence publications directly address issues related to argumentation. A relevant development predating such contemporary work is the area of *non-monotonic logic*.⁵ A logic is non-monotonic when a conclusion that, according to the logic, follows from given premises need not also follow when premises are added. In contrast, classical logic is monotonic. For instance, in a standard classical analysis, from premises “Edith goes to Vienna or Rome” and “Edith does not go to Rome,” it follows that “Edith goes to Vienna,” irrespective of possible additional premises. In a non-monotonic logic, it is possible to draw tentative conclusions, while keeping open the possibility that additional information may lead to the retraction of such conclusions. The standard example of non-monotonicity used in the literature of the 1980s concerns the flying of birds. Typically, birds fly, so if you hear about a bird, you will conclude that it can fly.

11.2.1 Reiter’s Logic for Default Reasoning

A prominent proposal in non-monotonic logic is Raymond Reiter’s (1980) logic for default reasoning. In his system, non-monotonic inference steps are applications of a set of given *default rules*. Reiter’s first example of a default rule expresses that birds typically fly:

$$\text{BIRD}(x) : \text{M FLY}(x) / \text{FLY}(x)$$

Here the M should be read as “it is consistent to assume.” The default rule expresses that if x is a bird, and it is consistent to assume that x can fly, then by default one can conclude that x can fly. One can then add exceptions, for instance, using this expression in classical logic that if x is a penguin, x cannot fly:

$$\text{PENGUIN}(x) \rightarrow \neg \text{FLY}(x)$$

The general default rule can be applied to a specific bird, by instantiating the variable x by an instance t . In this situation, from just the premise $\text{BIRD}(t)$, one can conclude (by default) $\text{FLY}(t)$, but when one has a second premise $\text{PENGUIN}(t)$, the conclusion $\text{FLY}(t)$ does not follow.

A more general form of a default rule is $\alpha : \text{M } \beta / \gamma$, where the element α is the *prerequisite* of the rule, β the *justification*, and γ the *consequent*. A special case occurs when the justification and consequent coincide, as in the bird example above; then we speak of a “normal default rule.”

⁵ See the entry on nonmonotonic logic in the Stanford Encyclopedia of Philosophy at <http://plato.stanford.edu/entries/logic-nonmonotonic/> (Antonelli 2010).

Other influential logical systems for non-monotonic reasoning include circumscription, auto-epistemic logic, and non-monotonic inheritance; each of them is discussed in the representative overview of the study of non-monotonic logic at its heyday by Gabbay et al. (1994).

11.2.2 Logic Programming

The general idea underlying logic programming is that a computer can be programmed using logical techniques. In this view, computer programs are considered not only procedurally as recipes for how to achieve the program's aims but also declaratively, in the sense that the program can be read like a text, for instance, as the rule-like knowledge needed to answer a question. In the logic programming language Prolog (the result of a collaboration between Colmerauer and Kowalski; see Kowalski 2011), examples of some facts and rules are the following (Bratko 2001):

```
parent(pam, bob)
parent(tom, bob)
parent(bob, pat)
female(pam)
female(pat)
male(bob)
male(tom)
mother(X, Y) :- parent(X, Y), female(X)
grandparent(X, Z) :- parent(X, Y), parent(Y, Z)
```

This small logic program represents (among other things) the facts that Pam and Tom are Bob's parents and that Pam is female and Tom male. It also represents the rules that someone's mother is a female parent and that a grandparent is the parent of a parent. Given this Prolog program, a computer can as expected derive that Pam is Bob's mother and that Pam is Pat's grandparent. Interaction with a Prolog program usually takes the form of a dialogue, where the user asks the program a question. For instance, the question whether Pam is Pat's grandparent takes this form:

```
?- grandparent(pam, pat)
```

which will be answered "Yes."

In the interpretation of logic programs, the closed world assumption plays a key role: a logic program is assumed to describe all facts and rules about the world. For instance, in the program above, it is assumed that all parent relations are given, so that the question "?- parent(bob, pam)," will be answered negatively. The closed world assumption is related to the idea of negation as failure. When a program cannot find a derivation of a statement, it will consider the statement to be false.

An example of a Prolog rule using negation as failure is the following (Bratko 2001):

```
likes(mary, X) :- animal(X), not snake(X)
```

This Prolog rule expresses that Mary likes animals, except snakes. The interpretation of the “not”-operator is not the same as the classical negation of formal logic. Since the not-operator models negation as failure, Mary likes any animal of which it *cannot be derived* that it is a snake. If the program only contains

```
animal(viper)
```

as a fact, it can be derived that “likes(mary, viper).” When the program has the following two factual clauses

```
animal(viper)
snake(viper)
```

the question

```
?- likes(mary, viper)
```

will be answered “No.” The example shows that logic programming is related to non-monotonic logic: adding facts can make a derivable fact underivable.

There are technical difficulties involved in the interpretation of the closed world assumption and negation as failure. The so-called stable model semantics of a logic program (Gelfond and Lifschitz 1988) formalizes the interpretation of logic programs with negation as failure. In later sections of this chapter (in particular in Sects. 11.3 and 11.5), we shall see how the stable model semantics of logic programming has influenced argumentation research.

11.2.3 Themes in the Study of Non-monotonic Logics

The study of non-monotonic logics gave hope that logical tools would become more relevant for the study of reasoning and argumentation. To some extent this hope has been fulfilled, since certain themes in reasoning and argumentation that before were at the boundaries of logic are now placed in the center of attention. Examples of such themes are defeasible inference, consistency preservation, and uncertainty. We shall briefly discuss these themes as they are addressed in the chapters of the handbook edited by Gabbay et al. (1994).

An inference is *defeasible* when it can be blocked or defeated in some way (Nute 1994, p. 354). Donald Nute speaks of the presentation of sets of beliefs as reasons for holding other beliefs as advancing *arguments*. When such arguments correspond to a defeasible inference, the argument is defeasible, and blockers or defeaters for an inference are blockers or defeaters for the corresponding argument.

Consistency preservation is the property that the conclusions drawn on the basis of certain premises can only be inconsistent in case the premises are inconsistent (Makinson 1994, p. 51). Makinson reviews general patterns of non-monotonic reasoning, explaining which patterns hold for which systems of non-monotonic reasoning. For instance, a pattern that holds for all systems listed by David Makinson (p. 88) is called *inclusion*. According to this pattern, the conclusions that can defeasibly be inferred from certain premises include those premises

themselves. The property of consistency preservation is much more restrictive: the property fails for many non-monotonic systems, meaning that in those systems certain consistent premises can lead to inconsistent conclusions. The property does hold for Reiter's logic for default reasoning, when only normal defaults are allowed. This corresponds to the intuitive meaning of a normal default of the form $\alpha : M \beta / \beta$, namely, that β follows from α , when it is consistent to assume β .

Henry Kyburg (1994, p. 400) distinguishes three kinds of inference involving *uncertainty*. The first is classical, deductive, valid inference about uncertainty. An example of this kind of inference is that when tossing a fair coin, we can conclude that the chance of three times heads in a row is $1/8$. The second kind of inference involving uncertainty Kyburg refers to as “inductive” (Kyburg's quotation marks): a categorical conclusion is accepted on the basis of premises that do not logically imply the conclusion, in the sense that the conclusion can be false even when the premises are true. Kyburg uses the flying bird example, discussed above, in which we conclude of a given bird that it flies, though it can happen that it does not. The third kind of inference with uncertainty gives probabilities of particular statements. Kyburg mentions the example “Given what I believe about coins, the chance is $1/8$ of getting three heads on the *next* three tosses” (1994, p. 400, Kyburg's italics).

11.2.4 Impact of the Study of Non-monotonic Logic

The study of non-monotonic logic has been very successful as a research enterprise and led to innovations in computer programming in the form of logic-based languages such as Prolog and to commercial applications: expert systems (see Sect. 11.1) often include some form of non-monotonic reasoning.

At the same time, non-monotonic logic did not fulfil all expectations of the artificial intelligence community in which it was initiated. Matthew Ginsberg (1994), for instance, notes – somewhat disappointedly – that the field put itself “in a position where it is almost impossible for our work to be validated by anyone other than a member of our small subcommunity of Artificial Intelligence as a whole” (1994, pp. 28–29). His diagnosis of this issue is that attention shifted from the key objective of building an intelligent artifact to the study of simple examples and mathematics. This leads him to plead for a more experimental, scientific attitude as opposed to a theoretical, mathematical focus.

Ginsberg's position can be connected to adequacy criteria for a system of non-monotonic logic (derived from the issues discussed by Antonelli 2010). Ideally a system of non-monotonic logic scores well on each of the three criteria: material, formal, and computational adequacy. A system is *materially adequate* when it can express a broad range of relevant examples. It is *formally adequate* when it has formal properties that are in line with our expectations (see in particular Makinson 1994). It is *computationally adequate* when the system models forms of inference that can be computed using a reasonable amount of resources (especially time and memory). A key lesson of the research on non-monotonic logic has been that for their fulfillment, these criteria depend on each other and that meeting them all is a

complex matter of balancing considerations. One way of interpreting Ginsberg's disappointment is that the focus of the field had shifted too strongly to formal adequacy, paying insufficient attention to material and computational adequacy. As we shall see, the argumentation perspective helped emphasize both the material and the computational adequacy of the systems studied.

11.3 Defeasible Reasoning

In 1987, the publication of John Pollock's paper *Defeasible reasoning in cognitive science* marked a turning point. The paper emphasized that the philosophical notion of "defeasible reasoning" coincides with what in AI is called "non-monotonic reasoning."⁶ Before turning to Pollock's contribution, we discuss some precursors.

11.3.1 Defeasible Reasoning: Origins

As philosophical heritage for the study of defeasible reasoning, Pollock (1987) refers to works by Roderick Chisholm (going back to 1957) and himself (earliest reference in 1967). In an insightful and scholarly historical essay, Ronald Loui (1995) places the origins of the notion of "defeasibility" a decade earlier, namely, in 1948 when the legal positivist H. L. A. Hart presented the paper "The ascription of responsibility and rights at the Aristotelian Society" (Hart 1951). Here is what Hart says:

[...] the accusations and claims upon which law courts adjudicate can usually be challenged or opposed in two ways. First, by a denial of the facts upon which they are based [...] and secondly by something quite different, namely a plea that although all the circumstances on which a claim could succeed are present, yet in the particular case, the claim or accusation should not succeed because other circumstances are present which brings the case under some recognized head of exception, the effect of which is either to defeat the claim or accusation altogether, or to "reduce" it so that only a weaker claim can be sustained. (Hart 1951, pp. 147–148; also quoted by Loui 1995, p. 22)

In this quote, Hart not only distinguishes the denial of the premises on which an argument is based from the denial of the inference from the premises to the conclusion, but he also points out that premises that would normally be sufficient may fail because "other circumstances are present."

Although Toulmin (2003) rarely uses the term *defeasible* in *The Uses of Argument* (see Chap. 4, "Toulmin's Model of Argumentation" of this volume), he is obviously an early adopter of the idea of defeasible reasoning, not mentioned by Pollock (1987). Toulmin himself is aware of the connection to Hart (acknowledged by him as inspiration for elements of his model of argument). In elegant modesty,

⁶ See the opening sentence of the paper's abstract: "What philosophers call defeasible reasoning is roughly the same as non-monotonic reasoning in AI" (Pollock 1987, p. 481).

Toulmin says that his key distinctions (claims, data, warrants, modal qualifiers, conditions of rebuttal, statements about the applicability or inapplicability of warrants) “will not be particularly novel to those who have studied explicitly the logic of special types of practical argument” (Toulmin 2003, p. 131). Toulmin notes that Hart has shown that the notion of defeasibility is relevant for jurisprudence, free will, and responsibility and that another philosopher, David Ross, has applied it to ethics, recognizing that moral rules may hold *prima facie*, but can have exceptions.

11.3.2 Pollock’s Undercutting and Rebutting Defeaters

In Pollock’s approach (1987), “reasoning” is conceived as a process that proceeds in terms of *reasons*. Pollock’s reasons correspond to the constellations of premises and a conclusion which argumentation theorists and logicians call (*elementary*) *arguments*. The process is governed by internalized rules that together form the procedural knowledge that allows us to reason correctly. Philosophers, in particular epistemologists such as Chisholm and Pollock himself, have – in Pollock’s opinion – a good understanding of the forms of defeasible reasoning, and the construction of computer programs that perform defeasible reasoning provides a good test setting for theories of reasoning. When a theory of reasoning is good, it should be possible to construct a computer program that implements it. By evaluating the program’s behavior, the successes and failures (Pollock speaks of *counterexamples*) can be studied.

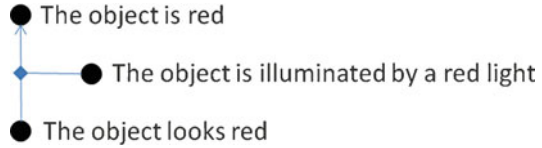
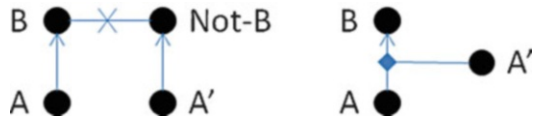
As said, Pollock’s theory of reasoning is built around the notion of “reasons,” the building blocks of arguments. Pollock distinguishes two kinds of reasons: (1) a reason is *non-defeasible* when it logically implies its conclusion and (2) a reason P for Q is *prima facie* when there is a circumstance R such that $P \wedge R$ is not a reason for the reasoner to believe Q .⁷ R is then a *defeater* of P as a reason for Q .

Note how closely related the idea of a *prima facie* reason is to non-monotonic inference: Q can be concluded from P , but not when there is additional information R .

Pollock’s standard example is about an object that looks red. “ X looks red to John” is a reason for John to believe that X is red, but there can be defeating circumstances, e.g., when there is a red light illuminating the object. See Fig. 11.2.

Pollock has argued for the existence of two kinds of defeaters: “rebutting” and “undercutting defeaters.” A defeater is *rebutting*, when it is a reason for the opposite conclusion (Fig. 11.3, left). *Undercutting* defeaters attack the connection between the reason and the conclusion and not the conclusion itself (Fig. 11.3, right). The example about looking red concerns an undercutting defeater since

⁷ In this volume, logical symbols are introduced in Sect. 3.3.5 and in Sect. 6.2.3. The symbol “ \wedge ” stands for conjunction (“and”).

Fig. 11.2 Pollock's red light example**Fig. 11.3** A rebutting defeater and an undercutting defeater

when there is a red light, it is not attacked that the object is red, but merely that the object's looking red is a reason for its being red.

A key element in Pollock's work on defeasible reasoning is the development of a theory of warrant. Pollock uses the term *warrant* as follows: a proposition is *warranted* in an epistemic situation if and only if an ideal reasoner starting in that situation would be justified in believing the proposition. Here justification is based on the existence of an undefeated argument with the proposition as conclusion.

Pollock has developed his theory of warrant in a series of publications which formed the basis of his 1995 book *Cognitive Carpentry*. Time and again, Pollock discovered special situations and examples that led him to revise the criteria determining warrant. He studied, for instance, self-defeating arguments and epistemological paradoxes, such as the lottery paradox. An argument is self-defeating if it contains propositions that are defeaters of other propositions in the argument. In the lottery paradox, there is a fair lottery of a million tickets, so for each specific ticket, there is a good reason to believe that it will not be the winning ticket. When these reasons are combined, one has a reason to believe that no ticket will win; a contradiction. A technically more problematic example goes as follows: P is a *prima facie* reason for Q , and Q a *prima facie* reason for R , but R is an undercutting defeater for P as a reason for Q . So if P justifies one's belief in Q , Q itself justifies R . But then P cannot justify Q because of the undercutter R , a contradiction. On the other hand, if P does not justify Q , there must be an argument defeating P as a reason for Q , which requires that R is justified, assuming that it is the only potential defeater available. This requires that Q is justified (assuming that Q is the only potential justification for R available), which is not possible now that P is not justifying (again assuming that P is the only potential justification for Q available).

As a background for his approach to the structure of defeasible reasoning, Pollock provides a list of important classes of specific reasons:

1. *Deductive reasons*. These are the conclusive reasons as they are in particular studied in standard classical logic. For instance, $P \wedge Q$ is a reason for P and for Q , and P and Q taken together are a reason for $P \wedge Q$.
2. *Perception*. When we perceive our world, the resulting perceptual state provides us with *prima facie* reasons pertaining to our world. Pollock says that no

intellectual mechanism such as reasoning is needed to bring us into such perceptual states. The perceptual state corresponding to the fact that P is the case (philosophers speak of “being appeared to” as if P were the case) provides a prima facie reason for believing that P is the case. In connection with perception, Pollock mentions a general kind of defeater that holds for all prima facie reasons: reliability defeaters.

3. *Memory*. Justified beliefs can also be arrived at by reasoning. The results of reasoning can be rejected when a belief used in the reasoning is later rejected by us. Pollock explains that people often have difficulty to remember the reasons used to arrive at a belief and only remember the beliefs that are the results of the reasoning process. As a consequence, recollection provides a class of prima facie reasons: reasoner S 's recalling of P is a prima facie reason for S to believe P . One undercutting defeater for this class of reasons is that one of the beliefs used in the original reasoning toward P is no longer believed and another that reasoner S misremembers. In the latter case, one remembers to have reasoned toward P , but that is not the case.
4. *Statistical syllogism*. Pollock describes the statistical syllogism as the simplest form of probabilistic reasoning: from “Most F 's are G ” and “This is an F ,” we can conclude prima facie “This is a G .” The strength of the reason depends on the probability of F 's being G . (Pollock notes that qualifications are in place, but we shall not discuss these here.⁸) The use of the statistical syllogism requires that all relevant information is taken into account. As an example, Pollock discusses the probability of arriving home when one is driving. Normally this may be a probability of 0.99, whereas when one is too drunk to stand, this probability may only be 0.5. Pollock explains that “if we know that Jones is driving home and is so drunk he cannot stand, the first probability gives us a prima facie reason for thinking he will get home. But the second probability gives us an undercutting defeater for that instance, leaving us unjustified in drawing any conclusion about whether Jones will get home.”
5. *Induction*. Pollock discusses two kinds of induction: (a) in *enumerative induction*, we conclude that all F 's are G when all F 's observed until now have been G ; (b) in *statistical induction*, we conclude that the proportion of F 's being G is approximately r when the proportion of observed F 's being G is r . About defeaters for inductive reasoning, Pollock remarks that they are complicated and sometimes problematic.

Pollock's theory is embedded in what he called the OSCAR project (Pollock 1995). This project aimed at the implementation of a rational agent. In the project Pollock addressed both theoretical (epistemic) and practical reasoning.⁹

⁸ Pollock aims for a theory of projectible properties. See also Pollock (1995, p. 66f).

⁹ See Hitchcock (2001, 2002a) for a survey and a discussion of the OSCAR project for those interested in argumentation. Hitchcock also gives further information about Pollock's work on practical reasoning, i.e., reasoning concerning what to do.

11.3.3 Forms of Argument Defeat

In a theory of defeasible reasoning based on arguments that can defeat each other, the question needs to be considered which forms of argument defeat exist.

Above we saw that both Hart and Pollock distinguished different forms of argument defeat. Hart distinguished the denial of the argument's premises and the denial of the inference from reason to conclusion; Pollock distinguished rebutting defeaters that include a reason for an opposite conclusion and undercutting defeaters that only attack the connection between reason and conclusion. We can conclude that Hart's denial of an inference and Pollock's undercutting defeater are closely related notions. As a result, three forms of argument defeat can be distinguished:

1. An argument can be *undermined*. In this form of defeat, the premises or assumptions of an argument are attacked.¹⁰ This form of defeat corresponds to Hart's denial of the premises.
2. An argument can be *undercut*. In this form of defeat, the connection between a (set of) reason(s) and a conclusion in an argument is attacked.
3. An argument can be *rebutted*. In this form of defeat, an argument is attacked by giving an argument for an opposite conclusion.

Precisely these three forms of argument defeat are used in a recent state-of-the-art system for the formal modelling of defeasible argumentation, ASPIC+ (Prakken 2010),¹¹ building on experiences in the ASPIC project.¹²

Bart Verheij (1996a, p. 122 f.) distinguishes two further forms of argument defeat: "defeat by sequential weakening" and "defeat by parallel strengthening." In *defeat by sequential weakening*, each step in an argument is correct, but the argument breaks down when the steps are chained. An example is an argument based on the sorites paradox:

This body of grains of sand is a heap.
 So, this body of grains of sand minus 1 grain is a heap.
 So, this body of grains of sand minus 2 grains is a heap.
 ...
 So, this body of grains of sand minus n grains is a heap.

At some point, the argument breaks down, in particular when n exceeds the total amount of grains of sand to start with.

¹⁰ This form of defeat is the basis of Bondarenko et al. (1997). We shall here not elaborate on the distinction between premises and assumptions. One way of thinking about assumptions is to see them as defeasible premises. See Sect. 11.5.3.

¹¹ Prakken (2010) speaks of ways of attack, where argument defeat is the result of argument attack.

¹² The ASPIC project (full name: Argumentation Service Platform with Integrated Components) was supported by the EU 6th Framework Programme and ran from January 2004 to September 2007. In the project, academic and industry partners cooperated in developing argumentation-based software systems.

Defeat by parallel strengthening is associated with what has been called the “accrual of reasons.” When reasons can accrue, it is possible that different reasons for a conclusion are together stronger than each reason separately. For instance, having robbed someone and having injured someone can be separate reasons for convicting someone. But when the suspect is a minor first offender, these reasons may each by itself be rebutted. On the other hand when a suspect has both robbed someone and also injured that person, the reasons may accrue and outweigh the fact that the suspect is a minor first offender. The argument for not punishing the suspect based on the reason that he is a minor first offender is defeated by the “parallel strengthening” of the two arguments for punishing him.

Pollock considered the accrual of reasons to be a natural idea, but argued against it (1995, p. 101 f.). His main point is that it is a contingent fact about reasons whether they accrue or not. For instance, whereas separate testimonies can strengthen each other, the opposite is the case when they are not independent but the result of an agreement between the witnesses. More recent discussions of the accrual of reasons are to be found in Prakken (2005a), Gómez Lucero et al. (2009, 2013), and D’Avila Garcez et al. (2009, p. 155 f.).

11.4 Abstract Argumentation

In 1995, a paper appeared in the journal *Artificial Intelligence* which reformed the formal study of non-monotonic logic and defeasible reasoning: Phan Minh Dung’s “On the acceptability of arguments and its fundamental role in non-monotonic reasoning, logic programming and n-person games” (Dung 1995). By his focus on argument attack as an abstract formal relation, Dung gave the field of study a mathematical basis that inspired many new insights. Dung’s approach and the work inspired by it are generally referred to as *abstract argumentation*.¹³

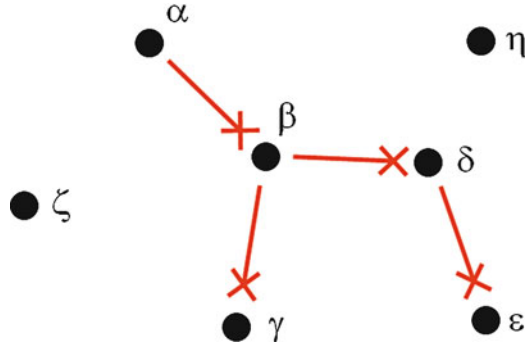
Dung’s paper is strongly mathematically oriented and has led to intricate formal studies. However, the mathematical tools used by Dung are elementary. As a result of this, and because of the naturalness of Dung’s basic concept of “argument attack,” we shall be able, in this section, to explain various concepts studied by Dung without going into much formal detail. This section on abstract argumentation is nevertheless the most formally oriented of the present chapter.

11.4.1 Dung’s Abstract Argumentation

The central innovation of Dung’s 1995 paper is that he started the formal study of the attack relation between arguments, thereby separating the properties depending exclusively on argument attack from any concerns related to the structure of the

¹³ The success of the paper is illustrated by its number of citations. By an imperfect but informative count in Google Scholar of July 22, 2013, there were 1938 citations.

Fig. 11.4 An argumentation framework representing attack between arguments



arguments. Mathematically speaking, the argument attack relation is a directed graph, the nodes of which are the arguments, whereas the edges represent that one argument attacks another. Such a directed graph is called an *argumentation framework*. Figure 11.4 shows an example of an argumentation framework, with the dots representing arguments and the arrows (ending in a cross to emphasize the attacking nature of the connection¹⁴) representing argument attack.

In Fig. 11.4, the argument α attacks the argument β , which in turn attacks both γ and δ .

Dung's paper consists of two parts, corresponding to two steps in what he refers to as an "analysis of the nature of human argumentation in its full generality" (Dung 1995, p. 324). In the first step, Dung develops the theory of argument attack and how argument attack determines argument acceptability. In the second part, he evaluates his theory by two applications, one consisting of a study of the logical structure of human economic and social problems and the other comprising a reconstruction of a number of approaches to non-monotonic reasoning, among them Reiter's and Pollock's. Notwithstanding the relevance of the second part of the paper, the paper's influence is largely based on the first part about argument attack and acceptability.

In Dung's approach, the notion of an "admissible set of arguments" is central. A set of arguments is *admissible* if two conditions obtain:

1. The set of arguments is *conflict-free*, i.e., does not contain an argument that attacks another argument in the set.
2. Each argument in the set is *acceptable* with respect to the set, i.e., when an argument in the set is attacked by another argument (which by (1) cannot be in the set itself), the set contains an argument that attacks the attacker.

In other words, a set of arguments is admissible if it contains no conflicts and if the set also can defend itself against all attacks. An example of an admissible set of arguments for the framework in Fig. 11.4 is $\{\alpha, \gamma\}$. Since α and γ do not attack one another, the set is conflict-free. The argument α is acceptable with respect to the set since it is not attacked, so that it needs no defense. The argument γ is also

¹⁴ This is especially helpful when also supporting connections are considered; see Sect. 11.5.

acceptable with respect to $\{\alpha, \gamma\}$: the argument γ needs a defense against the attack by β , which defense is provided by the argument α , α being in the set. The set $\{\alpha, \beta\}$ is not admissible since it is not conflict-free. The set $\{\gamma\}$ is not admissible since it does not contain a defense against the argument β , which attacks argument γ .

Admissible sets of arguments can be used to define argumentation notions of what counts as a proof or a refutation.¹⁵ An argument is “(admissibly) provable” when there is an admissible set of arguments that contains the argument. A minimal such set can be regarded as a kind of “proof” of the argument, in the sense that the arguments in such a set are just enough to successfully defend the argument against counterarguments. An argument is “(admissibly) refutable” when there is an admissible set of arguments that contains an argument that attacks the former argument. A minimal such set can be regarded as a kind of “refutation” of the attacked argument.

Dung speaks of the basic principle of argument acceptability using an informal slogan: the one who has the last word laughs best. The argumentative meaning of this slogan can be explained as follows. When someone makes a claim and that is the end of the discussion, the claim stands. But when there is an opponent raising a counterargument attacking the claim, the claim is no longer accepted – unless the proponent of the claim provides a counterattack in the form of an argument attacking the counterargument raised by the opponent. Whoever has raised the last argument in a sequence of arguments, counterarguments, counter-counterarguments, etc. is the one who has won the argumentative discussion.

Formally, Dung’s argumentation principle “the one who has the last word laughs best” can be illustrated using the notion of an “admissible set of arguments.” In Fig. 11.4, a proponent of the argument γ clearly has the last word and laughs best, since the only counterargument β is attacked by the counter-counterargument α . Formally, this is captured by the admissibility of the set $\{\alpha, \gamma\}$.

Although the principle of argument acceptability and the concept of an admissible set of arguments seem straightforward enough, it turns out that intricate formal puzzles loom. This has to do with two important formal facts:

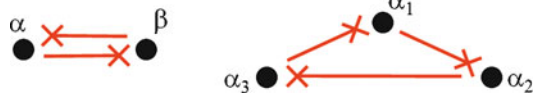
1. It can happen that an argument is both admissibly provable and refutable.
2. It can happen that an argument is neither admissibly provable nor refutable.

The two argumentation frameworks shown in Fig. 11.5 provide examples of these two facts. In the cycle of attacks on the left, consisting of two arguments α and β , each of the arguments is both admissibly provable and admissibly refutable. This is a consequence of the fact that the two sets $\{\alpha\}$ and $\{\beta\}$ are each admissible. For instance, $\{\alpha\}$ is admissible since it is conflict-free and can defend itself against attacks: the argument α itself defends against its attacker β . By the admissibility of the set $\{\alpha\}$, the argument α is admissibly provable, and the argument β admissibly refutable.

The cycle of attacks on the right containing three arguments, α_1 , α_2 , and α_3 , is an example of the second fact above, the fact that it can happen that an argument is neither admissibly provable nor refutable. This follows from the fact that there is no

¹⁵ In the following, we make use of terminology proposed by Verheij (2007).

Fig. 11.5 Arguments attacking each other in cycles



admissible set that contains (at least) one of the arguments, α_1 , α_2 , or α_3 . Suppose that the argument α_3 is in an admissible set. Then the set should defend α_3 against the argument α_2 , which attacks α_3 . This means that α_1 should also be in the set, since it is the only argument that can defend α_3 against α_2 . But this is not possible, because then α_1 and α_3 are both in the set, introducing a conflict in the set. As a result, there is only one admissible set: the empty set that contains no arguments at all. We conclude that no argument is admissibly provable or admissibly refutable.

The framework on the left can be interpreted informally as a situation where there are two reasonable options, as in the case when it has to be decided where to go for one's summer holidays. For instance, for someone living in the Netherlands, it is reasonable to argue that one should go to the south of France, e.g., because of the expected nice weather (argument α), but also that one should go to the north of Norway, e.g., because of a chance to see the Northern Lights (argument β). Arguing for doing both in one and the same holiday period would not normally be considered reasonable, which fact is formally expressed as the arguments attacking each other.

An informal interpretation of the framework on the right can be given in a sports situation involving three teams, where it may be unclear which team is the best one. For instance, consider the Dutch soccer teams Ajax, Feyenoord, and PSV. When Ajax has recently won most matches against Feyenoord, one has reason to think that Ajax is the best team (argument α_3). But when PSV has won most recent matches against Ajax, one has reason to think that PSV is the best (argument α_2), an argument attacking α_3 that Ajax is the best. When it also happens to be the case that Feyenoord has won most recent matches against PSV, there is a reason to think that Feyenoord is the best (argument α_1), attacking argument α_3 . Clearly, in this situation (not corresponding to the actual recent match results between the three teams), there is no answer to the question which team is the best. Formally, this corresponds to the fact that none of the three arguments is provable or refutable.

A related formal issue is that, when two sets of arguments are admissible, it need not be the case that their union is admissible. The framework on the left in Fig. 11.5 is an example. As we saw, the two sets $\{\alpha\}$ and $\{\beta\}$ are both admissible, but their union $\{\alpha, \beta\}$ is not, since it contains a conflict. This has led Dung to propose the notion of a "preferred extension" of an argumentation framework, which is an admissible set that is as large as possible, in the sense that adding elements to the set makes it not admissible. The framework in Fig. 11.4 has one preferred extension: the set $\{\alpha, \gamma, \delta, \zeta, \eta\}$. The framework in Fig. 11.5 on the left has two preferred extensions, $\{\alpha\}$ and $\{\beta\}$, and the one on the right has one, the empty set.

Some preferred extensions have a special property, namely, that each argument that is not in the set is attacked by an argument in the set. Such an extension is called a *stable extension*. Stable extensions are formally defined as conflict-free sets that

attack each argument not in the set. It follows from this definition that a stable extension is also a preferred extension.

The preferred extension $\{\alpha, \gamma, \delta, \zeta, \eta\}$ of the framework in Fig. 11.4, for instance, is stable, since the arguments β and ϵ , which are the only ones that are not in the set, are attacked by arguments in the set, α and δ , respectively. The preferred extensions $\{\alpha\}$ and $\{\beta\}$ of Fig. 11.5 (left) are also stable. The preferred extension of Fig. 11.5 (right), the empty set, is not stable, since none of the arguments α_1 , α_2 , and α_3 is attacked by an argument in the set. This example shows that there exist preferred extensions that are not stable. It also shows that there are argumentation frameworks that do not have a stable extension. In contrast, every argumentation framework has at least one preferred extension (which can be the empty set).

The concepts of preferred and stable extension of an argumentation framework can be regarded as different ways to interpret a framework, and therefore they are often referred to as “preferred semantics” and “stable semantics.” Dung (1995) proposed two other kinds of semantics: “grounded semantics” and “complete semantics,” and following his paper several additional kinds of semantics have been proposed (see Baroni et al. 2011, for an overview). By the abstract nature of argumentation frameworks, formal questions about the computational complexity of related algorithms and formal connections with other theoretical paradigms came within reach (see, e.g., Dunne and Bench-Capon 2003; Dunne 2007; Egly et al. 2010).

11.4.2 Labelling Arguments

Dung’s original definitions are in terms of mathematical sets. An alternative way of studying argument attack is in terms of labelling. Arguments are marked with a label, such as “Justified” or “Defeated” (or IN/OUT, +/−, 1/0, “Warranted”/“Unwarranted,” etc.), and the properties of different kinds of labelling are studied in the field. For instance, the notion of a stable extension corresponds to the following notion in terms of labelling:

A stable labelling is a function that assigns one label “Justified” or “Defeated” to each argument in the argumentation framework such that the following property holds: an argument α is labelled “Defeated” if and only if there is an argument β that attacks α and that is labelled “Justified.”

A stable extension gives rise to a stable labelling by labelling all arguments in the extension “Justified” and all other arguments “Defeated.” A stable labelling gives rise to a stable extension by considering the set of arguments labelled “Justified.”

The idea of labelling arguments can be thought of in analogy with the truth functions of propositional logic, where propositions are labelled with truth-values “true” and “false” (or 1/0, t/f, etc.). In the formal study of argumentation, labelling techniques predate Dung’s abstract argumentation (1995). Pollock (1994) uses labelling techniques in order to develop a new version of a criterion that determines warrant.

Verheij (1996b) applied the labelling approach to Dung's abstract argumentation frameworks. He uses argument labelling also as a technique to formally model which arguments are taken into account: in an interpretation of an abstract argumentation framework, the arguments that are assigned a label can be regarded as the ones taken into account, whereas the unlabelled arguments are not considered. Using this idea, Verheij defines two new kinds of semantics: the "stage semantics" and the "semi-stable semantics."¹⁶ Other authors using a labelling approach are Jakobovits and Vermeir (1999) and Caminada (2006). The latter author translated each of Dung's extension types into a mode of labelling.

As an illustration of the labelling approach, we give a labelling treatment of the *grounded extension* of an argumentation framework as defined by Dung.¹⁷ Consider the following procedure in which gradually labels are assigned to the arguments of an argumentation framework:

1. Apply the following to each unlabelled argument α in the framework: if the argument α is only attacked by arguments that have been labelled "Defeated" (or perhaps not attacked at all), label the argument α as "Justified."
2. Apply the following to each unlabelled argument α in the framework: if the argument α is attacked by an argument that has been labelled "Justified," label the argument α as "Defeated."
3. If step 1 and/or step 2 has led to new labelling, go back to step 1; otherwise stop.

When this procedure is completed (which always happens after a finite number of steps when the argumentation framework is finite), the arguments labelled "Justified" constitute the grounded extension of the argumentation framework. Consider, for instance, the framework of Fig. 11.4. In the first step, the arguments α , ζ , and η are labelled "Justified." The condition that all arguments attacking them have been "Defeated" is vacuously fulfilled, since there are no arguments attacking them. In the second step the argument β is labelled "Defeated," since α has been labelled "Justified." Then a second pass of step 1 occurs and the arguments γ and δ are labelled "Justified," since their only attacker β has been labelled "Defeated." Finally, the argument ε is labelled "Defeated," since δ has been labelled "Justified." The arguments α , γ , δ , ζ , and η (i.e., those labelled "Justified") together form the grounded extension of the framework. Every argumentation framework has a unique grounded extension. In the framework of Fig. 11.4, the grounded extension coincides with the unique preferred extension that is also the unique stable extension. The framework in Fig. 11.5 (left) shows that the grounded extension is not always a stable or preferred extension. Its grounded extension is here the empty set, but its two preferred and stable extensions are not empty.

¹⁶ In establishing the concept, Verheij (1996b) used the term *admissible stage extensions*. The now standard term *semi-stable extension* was proposed by Caminada (2006).

¹⁷ Dung's own definition of grounded extension, which does not use labelling, is not discussed here.

11.5 Arguments with Structure

Abstract argumentation, discussed in Sect. 11.4, focuses on the attack relation between arguments, abstracting from the structure of arguments. In this section we will discuss various ways of considering the structure of arguments for and against conclusions. The section is organized thematically in order to present general ideas rather than concrete systems. The themes discussed are arguments and specificity, the comparison of conclusive force, arguments with *prima facie* assumptions, arguments and classical logic, and the combination of support and attack.

11.5.1 Arguments and Specificity

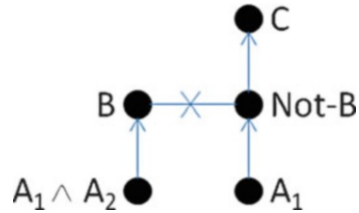
An early theme in the formal study of argumentation was that of “argument specificity” in relation to the resolution of a conflict between arguments. The key idea connecting arguments and specificity is that when two arguments are conflicting, with one of them being based on more specific information, the more specific argument wins the conflict and defeats the more general argument.

Guillermo Simari and Ronald Loui (1992) have provided a mathematical formalization of this connection between arguments and specificity. Their work was inspired by Poole’s (1985) work on specificity in the field of non-monotonic logic. Poole proposed to consider default hypotheses as explanations akin to scientific theories that need to be compared, such that more specific information is preferred to more general information. Simari and Loui (1992) aimed to combine specificity with a theory of argument, connecting to Pollock’s work on argumentative warrant. In their proposal, an argument is a pair (T, h) , with T being a set of defeasible rules that are applied to arrive at the argument’s conclusion h given the argument’s premises (formalized in the background knowledge). Arguments are assumed to be consistent, in the sense that no contradiction can be derived (not even defeasibly). Also arguments are assumed to be minimal, in the sense that all rules are needed to arrive at the conclusion. Formally, for an argument (T, h) , it holds that when T' is the result of omitting one or more rules in T , the pair (T', h) is not an argument. Two arguments (T, h) and (T', h') *disagree* when h and h' are logically incompatible, given the background knowledge. An argument (T, h) *counterargues* an argument (T', h') if (T, h) disagrees with an argument (T'', h'') that is a sub-argument of (T', h') , i.e., T'' is a subset of T' . An argument (T, h) *defeats* an argument (T', h') when (T, h) disagrees with a sub-argument of (T', h') that is strictly less specific.

For instance, given defeasible rules $A_1 \wedge A_2 \Rightarrow B$, $A_1 \Rightarrow \text{not-}B$, and $\text{not-}B \Rightarrow C$, and premises $A_1 \wedge A_2$ and A_1 , the argument $(\{A_1 \wedge A_2 \Rightarrow B\}, B)$ disagrees with the strictly less specific argument $(\{A_1 \Rightarrow \text{not-}B\}, \text{not-}B)$, so counterargues and defeats $(\{A_1 \Rightarrow \text{not-}B, \text{not-}B \Rightarrow C\}, C)$. The graphical structure of the argumentation is shown in Fig. 11.6.

Simari and Loui’s approach has been developed further – with applications in artificial intelligence, multi-agent systems, and logic – by the Bahia Blanca group,

Fig. 11.6 An argument defeated by a more specific counterargument



led by Simari (e.g., García and Simari 2004; Chesñevar et al. 2004; Falappa et al. 2002). García and Simari (2004) show the close connection between argumentation and logic programming that was also an inspiration for Dung (1995) (see also the Sect. 11.4.1, above, and Sect. 11.2.2). In their DeLP system of *defeasible logic programming*, they have developed close connections with logic programming. In a defeasible logic program, facts, strict rules and defeasible rules are represented. In DeLP, arguments are constructed by constructing derivations starting from the facts and using the strict and defeasible rules. Arguments cannot support opposing literals and obey a minimality constraint. Which arguments are counterarguments is determined using the notion of “disagreeing literals,” i.e., elementary claims and their negations.

It has been argued that specificity can only be one among several domain-dependent conflict resolution strategies. For example, in the law, a conflict between arguments based on two rules can be resolved not only by the specificity of the rules but also by their recency or authority (Hage 1997; Prakken 1997; see also Sect. 11.7). Pollock has argued against the general applicability of specificity defeat in logically complex situations.¹⁸

11.5.2 Comparing Conclusive Force

Another criterion that can determine which conflicting arguments survive the conflict is conclusive force. Arguments that have more conclusive force will survive more easily than arguments with less conclusive force.

One idea that connects conclusive force with argument structure is the *weakest link principle*, which Pollock characterizes as follows:

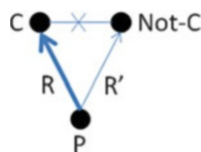
The degree of support of the conclusion of a deductive argument is the minimum of the degrees of support of its premises. (1995, p. 99)

Pollock presents the weakest link principle as an alternative to a Bayesian approach, which he rejects.

Gerard Vreeswijk (1997) has proposed an abstract model of argumentation with defeasible arguments that focuses on the comparison of the conclusive force of arguments. In his model, conclusive force is not modelled directly but as an abstract

¹⁸ He believes that a projectibility constraint is required (1995, pp. 105–106). See Note 8.

Fig. 11.7 Two conflicting arguments from the same premises, one with stronger conclusive force



comparison relation that expresses which arguments have more conclusive force than which other arguments. Vreeswijk had been looking for general, nontrivial, principles for determining the relative strength among arguments, but found that syntactic principles are not enough. By abstracting from such principles, the comparison of the conclusive force of arguments is no longer dealt with by the formal model itself, but becomes part of the domain knowledge as it can be represented using the formalism. According to Vreeswijk, this abstraction “saves us from the responsibility of telling how and why a particular argument should overrule any other particular argument” it “frees from the involvements with specificity and conclusive force in which it was enmeshed” (1997, p. 229). Instead, the focus can now be on the relations between argument structure, comparative conclusive force, and argument defeat.

Vreeswijk defines an *abstract argumentation system* as a triple (L, R, \leq) , where L is a set of sentences expressing the claims made in an argument, R is a set of defeasible rules allowing the construction of arguments, and \leq represents the conclusive force relation between arguments. The rules come in two flavors: strict and defeasible. Arguments are constructed by chaining rules. A set of arguments Σ is a *defeater* of an argument α if Σ and α are incompatible (i.e., imply an inconsistency), and α is not an underminer of Σ . An argument α is an *underminer* of a set of arguments Σ if Σ contains an argument β that has strictly lower conclusive force than α .

Vreeswijk’s model of abstract conclusive force can, for instance, be readily applied to Pollock’s notion of rebutting defeaters. Assume that, given the set of premises P , we have both a reason R for C and a reason R' for $\text{not-}C$. If now an argument based on R has higher conclusive force than an argument based on R' , the former is a defeater of the latter (Fig. 11.7).

Whereas Dung’s (1995) system is abstract, since it only considers argument attack, Vreeswijk’s proposal is abstract in particular because the conclusive force relation is left unspecified. Vreeswijk gives the following examples of conclusive force relations:

1. *Basic order.* In this order, a strict argument has more conclusive force than a defeasible argument. In a strict argument, no defeasible rule is used.
2. *Number of defeasible steps.* An argument has more conclusive force than another argument if it uses less defeasible steps. Vreeswijk remarks that this is not a very natural criterion, but it can be used to give formal examples and counterexamples.
3. *Weakest link.* Here the conclusive force relation on arguments is derived from an ordering relation on the rules. An argument has more conclusive force than another if its weakest link is stronger than the weakest link of the other.

4. *Preferring the most specific argument.* Of two defeasible arguments, one has more conclusive force than the other if the first has the premises of the second among its conclusions.

11.5.3 Arguments with Prima Facie Assumptions

In other proposals, the defeat of arguments is the result of prima facie assumptions that are successfully attacked. In their abstract, argumentation-theoretic approach to default reasoning, Bondarenko et al. (1997) use such an approach. Using a given deductive system (L, R) that consists of a language L and a set of rules R , so-called deductions are built by the application of rules. Given a deductive system (L, R) , an *assumption-based framework* is then a triple $(T, Ab, Contrary)$, where T is a set of sentences expressing the current beliefs, Ab expresses assumptions that can be used to extend T , and $Contrary$ is a mapping from the language to itself that expresses which sentences are contraries of which other sentences. Bondarenko and colleagues define a number of semantics (similar to Dung's 1995 in the context of abstract argumentation). For instance, a *stable extension* is a set of assumptions Δ such that the following properties hold:

1. Δ is closed, meaning that Δ contains all assumptions that are logical consequences of the beliefs in T and Δ itself.
2. Δ does not attack itself, meaning that there is no deduction from the beliefs in T and Δ with a contrary of an element of Δ as conclusion.
3. Δ attacks each assumption not in Δ , meaning that, for every assumption outside Δ , there is a deduction from T and Δ with a contrary of that assumption as conclusion.

As an example, Bondarenko and colleagues use the principle that a person is innocent unless proved guilty. When, for instance, the formula “¬guilty” “→ innocent” (in classical logic) is the only belief in T and “¬guilty” is the only assumption, then there is one stable extension, consisting of the elements of T , “¬guilty”, and their logical consequences (p. 71).

Bondarenko and colleagues show that several systems of non-monotonic logic can be modelled in their assumption-based framework. Its argumentative nature stems from the fact that it is built around the notion of attack, specifically attack on the assumptions that can be added to one's beliefs.

Verheij (2003a) has also developed an assumption-based model of defeasible argumentation. A difference with Bondarenko et al. (1997) is that the rules that are applied when drawing defeasible conclusions are themselves part of the assumptions. Technically, the rules have become conditionals in the underlying language. As a result, it can be the issue of an argument whether some proposition supports another proposition. In this way, Pollock's undercutting defeaters can be modelled as an attack on a conditional. Pollock's example of an object that looks red (Sect. 11.3.2) is formalized using two conditional sentences:

$$\begin{aligned} \text{looks_red} &\rightarrow \text{is_red} \\ \text{red_light} &\rightarrow \neg(\text{looks_red} \rightarrow \text{is_red}) \end{aligned}$$

The first expresses the conditional *prima facie* assumption that if something looks red, it is red. The second expresses an attack on this *prima facie* assumption: when there is a red light illuminating the object, it no longer holds that if the object looks red, it is red. The sentences illustrate the two connectives of the language: one to express the conditional (\rightarrow) and the other to express what is called *dialectical negation* (\times). The two conditional sentences correspond exactly to two graphical elements in Fig. 11.2: the first to the arrow connecting the reason and the conclusion and the second, nested, conditional to the arrow (ending in a diamond) that expresses the attack on the first conditional. This isomorphism between formal structures of the language and graphical elements has been used for the diagrams supported by the argumentation software ArguMed (Verheij 2005b; see Sect. 11.11).

The use of assumptions raises the question how they are related to an argument's ordinary premises. Assumptions can be thought of as the defeasible premises of an argument, and as such they are akin to defeasible rules¹⁹ with an empty antecedent. The Carneades framework (Gordon et al. 2007) distinguishes three kinds of argument premises: ordinary premises, presumptions (much like the *prima facie* assumptions discussed in this subsection), and exceptions (which are like the contraries of assumptions).

11.5.4 Arguments and Classical Logic

The relation between classical logic and defeasible argumentation remains a puzzle. Above we already saw different attempts at combining elements of classical logic and defeasible argumentation. In Pollock's system, classical logic is one source of reasons. Often conditional sentences ("rules") are used to construct arguments by chaining them (e.g., Vreeswijk 1997). Chaining rules is closely related to the inference rule *modus ponens* of classical logic. Verheij's (2003a) system gives conditionals which validate *modus ponens* a central place. Bondarenko et al. (1997) allow generalized rules of inference by their use of a contingent deductive system as starting point.

Besnard and Hunter (2008) have proposed to formalize arguments in classical logic entirely. For them, an argument is a pair (Φ, α) , such that Φ is a set of sentences and α is a sentence and such that Φ is logically consistent, Φ logically entails α (in the classical sense), and Φ is a minimal such set. (Note the analogy with the proposal by Simari and Loui 1992; see Sect. 11.5.1, above.) Φ is the support of

¹⁹ Some would object to the use of the term *rules* here. Rules are here thought of in analogy with the inference rules of classical logic. An issue is then that, as such, they are not expressed in the logical object language, but in a metalanguage. In the context of defeasible reasoning and argumentation (and also in non-monotonic logic), this distinction becomes less clear. Often there is one logical language to express ordinary sentences, a second formal language (with less structure and/or less semantics and therefore not usually referred to as "logical") used to express the rules, and the actual metalanguage that is used to define the formal system.

the argument, and α the claim. They define defeaters as arguments that refute the support of another argument. More formally, a *defeater* for an argument (Φ, α) is an argument (Ψ, β) , such that β logically entails the negation of the conjunction of some of the elements of Φ . An *undercut* for an argument (Φ, α) is an argument (Ψ, β) where β is equal to (and not just entails) the negation of the conjunction of some of the elements of Φ . A *rebuttal* for an argument (Φ, α) is an argument (Ψ, β) such that $\beta \leftrightarrow \neg\alpha$ is a tautology. Besnard and Hunter give the following example (p. 46):

p Simon Jones is a Member of Parliament.
 $p \rightarrow \neg q$ If Simon Jones is a Member of Parliament, then we need not keep quiet about details of his private life.
 r Simon Jones just resigned from the House of Commons.
 $r \rightarrow \neg p$ If Simon Jones just resigned from the House of Commons, then he is not a Member of Parliament.
 $\neg p \rightarrow q$ If Simon Jones is not a Member of Parliament, then we need to keep quiet about details of his private life.

Then $(\{p, p \rightarrow \neg q\}, \neg q)$ is an argument with the argument $(\{r, r \rightarrow \neg p\}, \neg p)$ as an undercut and the argument $(\{r, r \rightarrow \neg p, \neg p \rightarrow q\}, q)$ as a rebuttal.

Besnard and Hunter focus on structural properties of arguments, in part because of the diversity of proposals for semantics (see Sect. 11.4). For instance, when they discuss these systems, they note that the semantic conceptualization of such systems is not as clear as the semantics of classical logic, which is the basis of their framework (p. 221, also p. 226). At the same time, they note that knowledge representation can be simpler in systems based on defeasible logic (see the next subsection) or inference rules.

11.5.5 Combining Support and Attack

In this subsection, we discuss ways to combine support and attack when modelling argumentation. In several proposals, support and attack are combined in separated steps. In the first step, argumentative support is established by constructing arguments for conclusions from a given set of possible reasons or rules (of inference). The second step determines argumentative attack. Attack is, for instance, based on defeaters or on the structure of the supporting arguments in combination with a preference relation on arguments. In the third and final step, it is determined which arguments are warranted or undefeated. We already saw that several criteria have been proposed (e.g., Pollock's gradual development of criteria for argumentative warrant and Dung's abstract argumentation semantics).

An example of this modelling style is depicted in Fig. 11.8. Three supporting arguments are shown. The first on the left shows that A supports B , which in turn supports C . In the middle of the figure, this argument is attacked by a second argument, which reasons from A' to Not- B (hence against B). This argument is in turn attacked by a third argument, which reasons from A'' against the support relation R between A' and Not- B . Using the terminology of Sect. 11.3.2, the first sub-argument of the first argument is rebutted by the second, which is undercut by

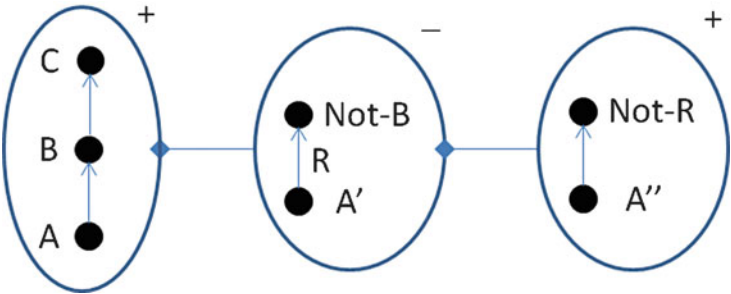


Fig. 11.8 Supporting arguments that attack each other



Fig. 11.9 The abstract argumentation framework associated with the example of Fig. 11.8

the third. The arguments are marked with a + sign when they are warranted and a – sign when they are defeated (which can be thought of as a variant of the labelling approaches of Sect. 11.4.2). The argument on the right is warranted, since it is not attacked. As a result, the middle argument is defeated, since it is attacked by a warranted argument. The left argument is then also warranted, since its only attacker is defeated. (See the procedure for computing the grounded extension of an argumentation framework discussed in Sect. 11.4.2.)

In this approach, the relation with Dung’s abstract argumentation is that we can abstract from the structure of the supporting arguments resulting in an abstract argumentation framework. For the example in Fig. 11.8, we get the abstract framework shown in Fig. 11.9. In this example, the argumentation semantics is unproblematic at the abstract argument attack level since the grounded extension coincides with the unique preferred extension that is also stable. Special care is needed to handle parts of arguments. For instance, the middle argument has the premise A' , which is not attacked and should therefore remain undefeated.

This type of combining support and attack is used in the ASPIC+ model (Prakken 2010). As discussed in Sect. 11.3.3, the ASPIC+ model incorporates the three main forms of argument defeat: undermining, undercutting, and rebutting.

A second approach does not separate support and attack when combining them. Arguments are constructed from reasons for and against conclusions, which in turn determine whether a conclusion follows or not. Figure 11.10 models the same argumentative information as Fig. 11.8, but now using this second approach.

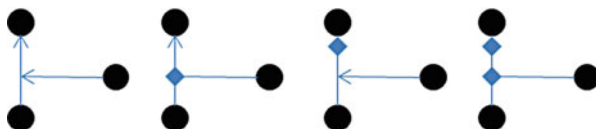
Here the reason A'' undercuts the argument from A' to Not-B, so Not-B is not supported (indicated by the open circle). As a result, Not-B does not actually attack B , which is therefore justified by A and in turn justifies C .

In this approach, for instance, conditional sentences are used to express which reasons support or attack which conclusions. An example is Nute’s *feasible logic*

Fig. 11.10 Arguments supporting and attacking conclusions



Fig. 11.11 The four ways of arguing about support and attack



(Nute 1994; Antoniou et al. 2001), which uses conditional sentences for the representation of strict rules and defeasible rules and for defeater rules, which can block an inference based on a defeasible rule. Algorithms for defeasible logic have been designed with good computational properties.

Another example of the approach is Verheij's DefLog (2003a), in which a conditional for the representation of support is combined with a negation operator for the representation of attack. A related proposal extending Dung's abstract argumentation frameworks by expressing both support and attack is bipolar argumentation (Cayrol and Lagasquie-Schiex 2005; Amgoud et al. 2008). For DefLog and bipolar argumentation, generalizations of Dung's stable and preferred semantics are presented. DefLog has been used to formalize Toulmin's argument model (Verheij 2005b).

A special case of the combination of support and attack occurs when the support and attack relations can themselves be supported or attacked. Indeed it can be at issue whether a reason supports or attacks a conclusion. The four ways of arguing about support and attack are illustrated in Fig. 11.11, from left to right: support of a support relation, attack of a support relation, support of an attack relation, and attack of an attack relation, respectively.

For instance, Pollock's undercutting defeaters can be thought of as attacks of a support relation (second from the left in Fig. 11.11). In Verheij's DefLog (2003a, 2005b), the four ways are expressed using nested conditional sentences, in a way that extends the expressiveness of Dung's frameworks. Modgil (2005) has studied attacks of attacks (rightmost in Fig. 11.11) in a system that also extends Dung's expressiveness.

11.6 Argument Schemes

Argumentation formalisms can only come to life when arguments are built from meaningful reasons. We already saw (in subsection 11.3.2) that Pollock made explicit which kinds of reasons he considered: deductive reasons, perception, memory, statistical syllogism, and induction.

An approach to the specification of meaningful kinds of reasons to construct arguments from is that of *argument schemes*, as they have been studied in

argumentation theory. Argument schemes were already distinguished by Perelman and Olbrechts-Tyteca (1969).²⁰ In today's artificial intelligence research on argumentation, Douglas Walton's approach to *argumentation schemes* (his terminology) has been widely adopted (e.g., Walton et al. 2008).

Argument schemes can be thought of as analogues of the rules of inference of classical logic. An example of a rule of inference is, for instance, the following version of *modus ponens*:

P
If *P*, then *Q*
Therefore: *Q*

Whereas logical rules of inference, such as *modus ponens*, are abstract, strict, and (usually) considered to have universal validity, argument schemes are concrete, defeasible, and context dependent. An example is the following scheme for witness testimony:

Witness A has testified that *P*.
Therefore: *P*

The use of this scheme is defeasible, as can be made explicit by asking critical questions, for instance:

Wasn't A mistaken?
Wasn't A lying?

A key reason why argument schemes have been taken up in artificial intelligence is that the critical questions associated with them correspond to defeating circumstances. For instance, the question whether A was mistaken gives rise to the defeater "A was mistaken."

Bex et al. (2003) applied the concept of "argumentation schemes" to the formalization of legal reasoning from evidence. An example of a scheme in that paper is the following:

Argument from expert opinion
Source E is an expert in domain D.
E asserts that proposition A is known to be true (false).
A is within D.
Therefore, A may plausibly be taken to be true (false).

This scheme has the following critical questions:

1. Expertise question: How credible is E as an expert source?
2. Field question: Is E an expert in D?
3. Opinion question: What did E assert that implies A?

²⁰ Although the term *schème argumentative* [argumentative scheme] was already used by Perelman and Olbrechts-Tyteca, according to Garssen (2001), van Eemeren et al. (1978, 1984) used the notion of argument(ation) scheme for the first time in its present sense. See also van Eemeren and Kruiger (1987), van Eemeren and Grootendorst (1992a), Kienpointner (1992), and Walton et al. (2008).

4. Trustworthiness question: Is E personally reliable as a source?
5. Consistency question: Is A consistent with what other experts assert?
6. Backup evidence question: Is E's assertion based on evidence?

The authors elaborate on how these and other argumentation schemes related to evidential reasoning can be formalized.

From the perspective of artificial intelligence, the work on argumentation schemes of Walton and his colleagues can be regarded as contributions to the theory of knowledge representation. Gradually, a collection of argumentation schemes is being developed. When appropriate, a scheme is added, and existing schemes are adapted, e.g., by refining the scheme's premises or critical questions. This knowledge representation point of view is developed by Verheij (2003b), who, like Bex et al. (2003), formalizes argumentation schemes as defeasible rules of inference. He notes that in Walton's work, argumentation schemes sometimes take the form of small derivations, or sequences of argumentation schemes, or even of a small prototypical dialogue. To streamline the work on knowledge representation, Verheij proposes to treat argumentation schemes as consisting of four elements: conclusion, premises, conditions of use, and exceptions. The exceptions correspond to answers to the critical questions of an argumentation scheme. By this representation format, it is also possible to consider different roles of critical questions: critical questions may concern a conclusion, a premise, a condition of use, or an exception.

Reed and Rowe (2004) have incorporated argumentation schemes in their Araucaria tool for the analysis of argumentative texts. Rahwan et al. (2007) have proposed formats for the integration of argumentation schemes in what is called the *Semantic Web*. The vision underlying the Semantic Web is that, when information on the Internet is properly tagged, it becomes possible to add meaning to such information that can be handled by a machine. For instance, when the conclusion, premises, conditions of use, and exceptions of an argumentation scheme are marked as such, software can be built that can handle these different elements of a scheme appropriately. Gordon et al. (2007) have integrated argumentation schemes in their Carneades model.

A fundamental issue concerning argumentation schemes is how to evaluate a scheme or set of schemes: When is a scheme good, and under which circumstances? When is an adaptation appropriate? This issue is, for instance, discussed in Reed and Tindale (2010).

11.7 Argumentation Dialogues

One reason why Toulmin's (2003, 1958) *The Uses of Argument* remains a thought-provoking study is his starting point that argument should be considered in its natural, critical, and procedural context. This starting point led him to propose that logic, in the sense of the theory of good argument, should be treated as "generalized jurisprudence," where a critical and procedural perspective on good

argument is the norm. The critical and procedural sides of arguments come together in the study of argumentation dialogues.

The following is a fragment, taken from McBurney and Parsons (2002a), of an argumentation dialogue concerning the sale of a used car between a buyer (B) and seller (S), illustrating the study of argumentative dialogue in a computational setting:

S: BEGIN(PERSUASION(Make);PERSUASION(Condition_of_Engine); PERSUASION(Number_of_Owners))

S requests a sequence of three Persuasion dialogues over the purchase, criteria Make, Condition of the Engine, and Number of Owners.

B: AGREE(PERSUASION(Make); PERSUASION(Condition_of_Engine); PERSUASION(Number_of_Owners))

PERSUASION Dialogue 1 in the sequence of three opens.

S: Argues that “Make” is the most important purchase criterion, within any budget, because a typical car of one Make may remain in better condition than a typical car of another Make, even though older.

B: Accepts this argument.

PERSUASION Dialogue 1 closes upon acceptance of the proposition by B. PERSUASION Dialogue 2 opens.

S: Argues that “Condition_of_Engine” is the next most important purchase criterion.

B: Does not accept this. Argues that he cannot tell the engine condition of any car without pulling it apart. Only S, as the Seller, is able to tell this. Hence, B must use “Mileage” as a surrogate for “Condition_of_Engine.”

PERSUASION Dialogue 2 closes with neither side changing its views: B does not accept “Condition_of_Engine” as the second criterion, and S does not accept “Mileage” as the second criterion. PERSUASION Dialogue 3 opens.

The fragment shows how dialogues about certain topics are opened and closed in relation to the arguments provided.

The formal and computational study of argumentation dialogues has primarily been performed in the fields of AI and law and of multi-agent systems, as addressed in the following two subsections.

11.7.1 Argumentation Dialogues in AI and Law

In the field of AI and law, argumentation dialogues have been studied extensively (see Bench-Capon et al 2004, 2009). Ashley’s (1990) HYPO, to be discussed further in Sect. 11.9, takes a 3-ply dialogue model as starting point, in which a proponent makes a claim, which can be attacked by an opponent and then defended by the proponent. An early AI and law conception of argumentation dialogue is Thomas Gordon’s (1993, 1995) *Pleadings game*. Gordon formalizes the pleading in a civil law process, which he considers to be aimed at determining the legal and factual issues of a case. In the Pleadings game, a proponent and opponent (in this setting referred to as “plaintiff” and “defendant”) can concede, deny, and defend claims and also declare defeasible rules. Players can discuss the validity of a defeasible rule. Players are committed to the consequences of their claims, as prescribed by a non-monotonic logic underlying the Pleadings game.

Other dialogue models of argumentation in AI and law have been proposed by Prakken and Sartor (1996, 1998), Hage et al. (1993), and Lodder (1999). In Prakken and Sartor's approach (1996, 1998), dialogue models are presented as a kind of proof theory for their argumentation model. Prakken and Sartor interpret a proof as a dialogue between a proponent and opponent. An argument is justified when there is a winning strategy for the proponent of the argument. Hage et al. (1993) and Lodder (1999) propose a model of argumentation dialogues with the purpose of establishing the law in a concrete case. They are inspired by the idea of law as a pure procedure (though not endorsing it): when the law is purely procedural, there is no criterion for a good outcome of a legal procedure other than the procedure itself.

Some models emphasize that the rules of argumentative dialogue can themselves be the subject of debate. An actual example is a parliamentary discussion about the way in which legislation is to be discussed. In philosophy, Suber has taken the idea of self-amending games to its extreme by proposing the game of Nomic, in which the players can gradually change the rules.²¹ Proposals to formalize such meta-argumentation include Vreeswijk (2000) and Brewka (2001), who have proposed formal models of argumentative dialogues allowing self-amendments.²²

In an attempt to clarify how logic, defeasibility, dialogue, and procedure are related, Henry Prakken (1997, p. 270 f.) proposed to distinguish four layers of argumentation models. The first is the logical layer, which determines contradiction and support. The second layer is dialectical, which defines what counts as attack, counterargument, and also when an argument is defeated. The third layer is procedural and contains the rules constraining a dialogue, for instance, which moves parties can make, e.g., propose a claim or present a counterargument, when parties can make a move, e.g., when it is their turn and when the dialogue is finished. The fourth and final layer is strategic. At this layer, one finds the heuristics used by a good, effective arguer.

Jaap Hage (2000) addresses the question of why dialogue models of argumentation became popular in the field of AI and law. He gives two reasons. The first is that legal reasoning is defeasible, and dialogue models are a good tool to study defeasibility. The second reason is that dialogue models are useful when investigating the process of establishing the law in a concrete case. Hage recalls the legal theoretic discussion about the law as an open system, in the sense that there can be disagreement about the starting points of legal arguments. As a result, the outcome of a legal procedure is indeterminate. A better understanding of this predicament can be achieved by considering the legal procedure as an argumentative dialogue.

Hage (2000) then discusses three functions of dialogue models of argumentation in AI and law. The first function is to define argument justification, in analogy with dialogical definitions of logical validity as can be found in the work by Lorenzen and Lorenz (1978). In this connection, Hage refers to Barth and Krabbe's notion of the "dialectical garb" of a logic as opposed to an axiomatic,

²¹ <http://en.wikipedia.org/wiki/Nomic>. See also Hofstadter (1996, chapter 4).

²² See also the study of Nomic by Vreeswijk (1995a).

inferential, or model-theoretic garb (Barth and Krabbe 1982, pp. 7–8). See also Sect. 6.5 of this volume. Hage generalizes the idea of dialectical garb to what he refers to as *battle of argument* models of defeasible reasoning in which arguments attack each other, such as Loui's (1987), Pollock's (1987, 1994), Vreeswijk's (1993), Dung's (1995), and Prakken and Sartor's (1996). Battle of argument models can or cannot be presented in a dialectical garb. In their dialectical garb, such models define the justification of an argument in terms of the existence of a winning strategy in an argumentative dialogue game.

The second function of dialogue models of argumentation that is distinguished by Hage is to establish shared premises. Proponent and opponent enter into a dialogue that leads to a shared set of premises. The conclusions that follow from these shared premises can be regarded as justified. In this category, Hage discusses Gordon's Pleadings game, which we discussed above. Hage makes connections to legal theory, in particular Alexy's (1978) procedural approach to legal justification, and the philosophy of truth and justification, in particular Habermas's (1973) consensus theory of truth and Schwemmer's approach to justification, in which the basis of justification is only assumed as long as it is not actually questioned (Schwemmer and Lorenzen 1973).

As a third and final function of dialogue models of argumentation in AI and law, Hage discusses the procedural establishment of law in a concrete case. In this connection, he discusses mediating systems, which are systems that support dialogues, instead of evaluating them. He uses Zeno (Gordon and Karacapilidis 1997), Room 5 (Loui et al. 1997) (see also Sect. 11.11), and DiaLaw (Lodder 1999) as examples. Hage argues that regarding the law as purely procedural is somewhat counterintuitive, since there exist cases in which there is a clear answer, which can be known even without actually going through the whole procedure. Hage speaks therefore of the law as an imperfect procedure, in which the correctness of the outcome is not guaranteed.

11.7.2 Argumentation Dialogues in Multi-agent Systems

Outside the field of AI and law, one further function of dialogue models of argumentation has been emphasized, namely, that a dialogue perspective on argumentation can have computational advantages. For instance, argumentative dialogue can be used to optimize search, e.g., by cutting off dead ends or focusing on the most relevant issues. Vreeswijk (1995b) takes this assumption as the starting point of a paper:

If dialectical concepts like argument, debate, and resolution of dispute are seemingly so important in practical reasoning, there must be some reason as to why these techniques survived as rulers of commonsense argument. Perhaps the reason is that they are just most suited for the job. (Vreeswijk 1995b, p. 307)

Vreeswijk takes inspiration from a paper by Loui (1998), which circulated in an earlier version since 1992. Loui emphasizes the relevance of protocol, the

assignment of burdens to parties, termination conditions, and strategy. A key idea is that argumentation dialogues are well suited for reasoning in a setting of bounded resources (see also Loui and Norman 1995).

Inspired by the computational perspective on argumentation, approaches to argumentative dialogue have been taken up in the field of multi-agent systems.²³ The focus in that field is on the interaction between autonomous software agents that pursue their own goals or goals shared with other agents. Since the actions of one agent can affect those of another, beyond control of an individual agent or the system as a whole, the kinds of problems when designing multi-agent software systems are of a different nature than those in the design of software where control can be assumed to be centralized. Computational models of argumentation have inspired the development of interaction protocols for the resolution of conflicts among agents and for belief formation. The typology of argumentative dialogue that has been proposed by Douglas Walton and Erik Krabbe (1995) has been especially influential (see also Sect. 7.8 of this volume).²⁴

In particular, the persuasion dialogue, starting with a conflict of opinion and aimed at resolving the issue by persuading a participant, has been extensively studied. An early persuasion system (predating Walton and Krabbe's typology) is Sycara's Persuader system (1989). Persuader, developed in the field of what was then called *Distributed AI*, uses the domain of labor negotiation as an illustration. An agent forms a model of another agent's beliefs and goals and determines its actions in such a way that it influences the other agent. For instance, agents can choose a so-called threatening argument, i.e., an argument that is aimed at persuading another agent to give up a goal. Here it is notable that in Walton and Krabbe's typology, negotiation is a dialogue type different from persuasion.

Prakken (2006, 2009) gives an overview and analysis of dialogue models of persuasion. In a dialogue system, dialogues have a goal and participants. It is specified which kinds of moves participants can make, e.g., making claims or conceding. Participants can have specific roles, e.g., Proponent or Opponent. The actual flow of a dialogue is constrained by a protocol, consisting of rules for turn taking and termination. Effect rules determine how the commitments of participants change after a dialogue move. Outcome rules define the outcome of the dialogue, by determining, for instance, in persuasion dialogues who wins the dialogue. These elements are common to all dialogue types. By specifying or constraining the elements, one generates a system of persuasion dialogue. In particular, the dialogue goal of persuasion dialogue consists of a set of propositions that are at issue and need to be resolved. Prakken formalizes these elements and then uses his analytic model to discuss several extant persuasion systems, among them Mackenzie's

²³ For an overview of the field of multi-agent systems, see the textbook by Wooldridge (2009), which contains a chapter entitled "Arguing."

²⁴ The 2000 Symposium on Argument and Computation at Bonskeid House, Perthshire, Scotland, organized by Reed and Norman, has been a causal factor. See Reed and Norman (2004b).

(1979) proposals and Walton and Krabbe's (1995) model of what they call *Permissive persuasion dialogue* (see Sect. 6.9 of this volume).

Sycara's Persuader system (1989) is a persuasion system applied to labor negotiation. Parsons et al. (1998) also speak of negotiation as involving persuasion. Their model uses the belief-desire-intention model of agents (Rao and Georgeff 1995) and specifies logically how the beliefs, desires, and intentions of the agents influence the process of negotiation.²⁵ Dignum et al. (2001) have studied the role of argumentative dialogue for the forming of coalitions of agents that create collective intentions. Argumentation about what to do rather than about what is the case has been studied in a dialogue setting by Atkinson and colleagues (Atkinson et al. 2005, 2006; Atkinson and Bench-Capon 2007). It is noteworthy that Pollock's OSCAR model (1995) is an attempt to combine theoretical and practical reasoning, but in a single agent setting. Amgoud (2009) discusses the application of dialogical argumentation to decision making (see also Girle et al. 2004). Deliberation has been studied by McBurney et al. (2007).

Several attempts have been made to systematize the extensive work on argumentation dialogue. Bench-Capon et al. (2000), for instance, propose a formal method for modelling argumentation dialogue. Prakken (2005b) provides a formal framework that can be used to study argumentation dialogue models with different choices of underlying argument model and reply structures. McBurney and Parsons (2002a, b, 2009) have developed an abstract theory of argumentative dialogue in which syntactic, semantic, and pragmatic elements are considered.

11.8 Reasoning with Rules

We already saw examples showing the close connections between argumentation research in artificial intelligence and legal applications. Since argumentation is an everyday task of professional lawyers, this is not unexpected. An institutional reason, however, is that there exists an interdisciplinary research field, called *artificial intelligence and law*,²⁶ in which because of the nature of law, the topic of argumentation has been given a great deal of attention. Early work in that field (e.g., McCarty 1977; Gardner 1987) already showed the intricacies and special characteristics of legal argumentation. Thorne McCarty (1977) attempted to formalize the detailed reasoning underlying a US Supreme Court case. Anne Gardner (1987) proposed a system aimed at what she called *issue spotting*. In a legal case, there is an *issue* when no rule applies or when conflicting rules apply. In this section, we pay special attention to the work inspired by developments in

²⁵ A systematic overview of argumentation dialogue models of negotiation has been provided by Rahwan et al. (2003).

²⁶ The primary journal of the field of AI and Law is *Artificial Intelligence and Law*, with the biennial ICAIL and annual JURIX as the main conferences.

non-monotonic logic that has been carried out, mostly in the mid-1990s, regarding *reasoning with (legal) rules*.

Prakken's (1997) book *Logical Tools for Modelling Legal Argument* provides an extensive and careful treatment of the contributions of techniques from non-monotonic logic to the formal modelling of legal reasoning.²⁷ The formal tools presented by Prakken have gradually evolved into the ASPIC+ model (Prakken 2010) (see Sect. 11.3.3). Parts of the material were developed in close collaboration with Sartor (e.g., Prakken and Sartor 1996, 1998; see also the excellent resource Sartor 2005).

The following example shows how Prakken models a case in contract law (1997, p. 171). The example concerns the defeasible rule that contracts only bind the contracting parties (d_1) and a defeasible, possibly contravening, rule specifically for contracts that concern the lease of a house, saying that such contracts also bind future owners of the house (d_2). Another exception is added by a defeasible rule saying that, even in the case of a house lease, when a tenant agrees to make such a stipulation, only the contracting parties are bound (d_3). The factual statements f_{n1} and f_{n2} say, respectively, (1) that a house lease is a special kind of contract and (2) that binding only the contracting parties and binding also future owners of a house do not go together.

d_1 : x is a contract $\Rightarrow x$ only binds its parties.

d_2 : x is a lease of house $y \Rightarrow x$ binds all owners of y .

d_3 : x is a lease of house $y \wedge$ tenant has agreed in x that x only binds its parties $\Rightarrow x$ only binds its parties.

f_{n1} : $\forall x \forall y (x \text{ is a lease of a house } y \rightarrow x \text{ is a contract})$.²⁸

f_{n2} : $\forall x \forall y \neg (x \text{ only binds its parties} \wedge x \text{ binds all owners of } y)$.

When there is a contract about the lease of a house, there is an apparent conflict, since both d_1 and d_2 seem to apply. In the system, the application of d_2 blocks the application of d_1 , using a mechanism of specificity defeat (see Sect. 11.5). In a case where also the condition of d_3 is fulfilled, namely, when the tenant has agreed that the lease contract only binds the contracting parties, the application of rule d_3 blocks the application of rule d_2 , which in that case does no longer block the application of d_1 .

Prakken uses elements from classical logic (for instance, classical connectives and quantifiers) and non-monotonic logic (defeasible rules and their names) and shows how they can be used to model rules with exceptions, as they occur prominently in the law. He treats, for instance, the handling of explicit exceptions, preferring the most specific argument, reasoning with inconsistent information, and reasoning about priority relations.

²⁷ The book is based on Prakken's (1993) doctoral dissertation.

²⁸ " $\forall x \dots$ " stands for "for every entity x it holds that \dots ". Similarly, for " $\forall y \dots$ ". See also Sect. 6.2 of this volume.

In the same period, Hage developed *reason-based logic* (Hage 1997; see also Hage 2005).²⁹ Hage presents reason-based logic as an extension of first-order predicate logic in which reasons play a central role. Reasons are the result of the application of rules.³⁰ Treating them as individuals allows the expression of properties of rules. Whether a rule applies depends on the rule's conditions being satisfied but also on possible other reasons for or against applying the rule. Consider for instance the rule that thieves are punishable:

punishable: thief(x) \Rightarrow punishable(x)

Here “punishable” before the colon is the rule's name. When John is a thief (expressed as thief(john)), the rule's applicability can follow:

Applicable(thief(john) \Rightarrow punishable(john))

This gives a reason that the rule ought to be applied. If there are no reasons against the rule's application, this leads to the obligation to apply the rule. From this it will follow that John is punishable.

A characteristic aspect of reason-based logic is that it models the weighing of reasons. In this system, there is no numerical mechanism for weighing; rather it can be explicitly represented that certain reasons for a conclusion outweigh the reasons against the conclusion. When there is no weighing information, the conflict remains unresolved and no conclusion follows.

Like Prakken, Hage uses elements from classical logic and non-monotonic logic. Because of the emphasis on philosophical and legal considerations, reason-based logic is less like a formal logical system and more like a semiformal system for the representation of the ways of reasoning in the domain of law. Where Prakken's book remains closer to the field of AI, Hage's book reads more like a theoretical essay in philosophy or law.

Reason-based logic has been applied, for instance, to a well-known distinction made by the legal theorist Dworkin (1978): whereas legal *rules* seem to lead directly to their conclusion when they are applied, legal *principles* are not direct and merely give rise to a reason for their conclusion. Only a subsequent weighing of possibly competing reasons leads to a conclusion. Different models of the distinction between rules and principles in reason-based logic have been proposed. Hage (1997) follows Dworkin and makes a strict formal distinction, whereas Verheij et al. (1998) show how the distinction can be softened by presenting a model in which rules and principles are the extremes of a spectrum.

Loui and Norman (1995) have argued that there is a calculus associated with what they call the *compression of rationales*, i.e., the combination and adaptation of the rules underlying arguments which are akin to Toulmin's warrants. They give the

²⁹ Reason-based logic exists in a series of versions, some introduced in collaboration with Verheij (e.g., Verheij 1996a).

³⁰ We shall simplify Hage's formalism a bit by omitting the explicit distinction between rules and principles.

following example of a compression of rules (rationales). When there is a rule “vehicles used for private transportation are not allowed in the park” and also a rule “vehicles are normally for private transportation,” then a two-step argument based on these two rules can be shortened when the so-called compression rationale “no vehicles in the park,” based on these two rules, is used.

11.9 Case-Based Reasoning

Reasoning with rules (Sect. 11.8) is often contrasted with *case-based reasoning*. Whereas the former is about following rules that describe existing conditional patterns, the latter is about finding relevantly similar examples that, by analogy, can suggest possible conclusions in new situations. In the domain of law, rule-based reasoning is associated with the application of legal statutes, and case-based reasoning with the following of precedents. The contrast can be appreciated by looking at the following two examples:

Art. 300 of the Dutch Criminal Code

1. Inflicting bodily harm is punishable with up to two years of imprisonment or a fine of the fourth category.
2. When the fact causes grievous bodily harm, the accused is punished with up to four years of imprisonment or a fine of the fourth category.
3. [...]

Dutch Supreme Court July 9, 2002, NJ 2002, 499

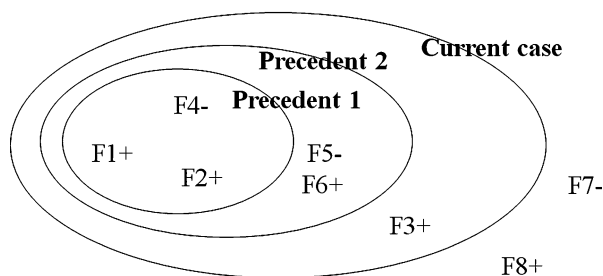
Theft requires the taking away of a good. Can one steal an already stolen car? The Supreme Court's answer is: yes.

The first example is an excerpt from a statutory article expressing a material rule of Dutch criminal law, stating the kinds of punishment associated with inflicting bodily harm. The levels of punishment depend on specific conditions, with more severe bodily harm being punishable with longer imprisonment. The second example is a (very) brief summary of a Supreme Court decision. In this case, an already stolen car was stolen from the thief. One of the statutory requirements of the crime theft is that a good is taken away, and here the car was already taken away from the original owner of the car. The new legal question was addressed whether stealing from the original thief can count as theft from the car's owner. In other words, can an already stolen car still be taken away from the original owner? Here the Supreme Court decided that stealing a stolen car can count as theft since the original ownership is the deciding criterion; it does not matter whether a good is actually in the control of the owner at the time of theft.

In case-based reasoning, the *stare decisis* doctrine is leading: when deciding a new case, one should not depart from an earlier, relevantly similar decision, but decide analogously. In the field of AI and law, Kevin Ashley's HYPO system (1990) counts as a milestone in the study of case-based reasoning.³¹ In HYPO, cases

³¹ See also Rissland and Ashley (1987), Ashley (1989), and Rissland and Ashley (2002).

Fig. 11.12 Factors in two precedent cases and the current case



are treated as sets of factors, where factors are generalized facts pleading for or against a case. Consider the following example about an employee who has been dismissed by his employer and aims to void (i.e., cancel) the dismissal.³²

Issue:

Can a dismissal be voided?

Precedent case:

- + The employee's behavior was always good.
- There was a serious act of violence.

Outcome:

+ (voided)

Current case:

- + The employee's behavior was always good.
- There was a serious act of violence.
- + The working atmosphere was not affected.

Outcome: ?

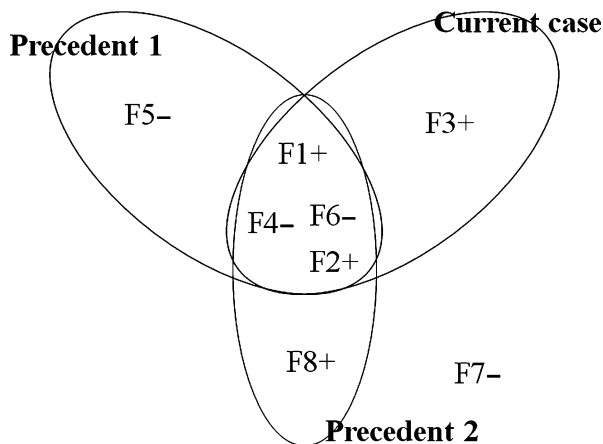
There is a precedent case with one factor pleading for voidance (the good behavior) and one pleading against voidance (the violence). In this precedent case, it was decided that voidance was in place. In the current case, the same factors apply, but there is also one additional factor pleading for voidance, namely, that the working atmosphere was not affected. One could say that the decision taken in the precedent case is even more strongly supported in the current case. As a result, in HYPO and similar systems, the suggested conclusion is that also in the current case, voidance of the dismissal would be called for.

The example in Fig. 11.12 shows that factors can be handled formally without knowing what they are about. There is a first precedent with pro-factors F1 and F2 and a con-factor F4. The second precedent has as additional factors a con-factor F5 and a pro-factor F6. The current case has all these factors and one more pro-factor F3. The domain also contains con-factor F7 and pro-factor F8 which do not apply to these cases.

Assume now that the first precedent was decided negatively and the second positively. The second precedent is more on point, in the sense that it shares more

³² The example is inspired by the case material used by Roth (2003).

Fig. 11.13 A different constellation of precedents



factors with the current case than the first precedent. Since the current case even has an additional pro-factor, it is suggested that the current case should be decided positively, in analogy with precedent 2. Precedents do not always determine the outcome of the current case. For instance, if the second precedent had been decided negatively, there would be no suggested outcome for the current case, since pro-factor F3 may be or may not be strong enough to turn the case.

Another formal example is shown in Fig. 11.13. When both precedents have been decided positively, the suggested outcome for the current case is also positive. Precedent 1 can be followed because its support for a positive decision is weaker than that of the current case: the precedent has an additional con-factor, and the current case an additional pro-factor. Precedent 2 cannot be followed since F8 may be or may not be a stronger pro-factor than F3.

HYPO's aim is to form arguments about the current case, without determining a decision. This is made explicit in its model of 3-ply arguments. In HYPO's 3-ply model, the first argument move ("ply"), by the Proponent, is the citing of a precedent case in analogy with the current case. The analogy is based on the shared factors. The second argument move, by the Opponent, responds to the analogy, e.g., by distinguishing between the cited precedent case and the current case, pointing out differences in relevant factors, or by citing counterexamples. The third argument move, again by the Proponent, responds to the counterexamples, e.g., by making further distinctions.

HYPO's factors not only have a side (pro or con) associated with them, but can also come with a dimension pertaining in some way to the strength of the factor. This allows the citation of cases that share a certain factor, but have this factor with a different strength. For instance, by the use of dimensions, the good behavior of the employee (of the first informal example) can come in gradations, say from good via very good to excellent.

11.10 Values and Audiences

Trevor Bench-Capon (2003) has developed a model of the values underlying arguments.³³ In this endeavor he refers to Perelman and Olbrechts-Tyteca's new rhetoric:

If men oppose each other concerning a decision to be taken, it is not because they commit some error of logic or calculation. They discuss apropos the applicable rule, the ends to be considered, the meaning to be given to values, the interpretation and characterisation of facts. (Perelman & Olbrechts-Tyteca, 1969, p. 150)

Because of the character of real-life argumentation, it is not to be expected that cases will be conclusively decided. Bench-Capon therefore aims to extend formal argumentation models by the inclusion of the values of the audiences addressed. This allows him to model the persuasion of an audience by means of argument.

Bench-Capon (2003) uses Dung's (1995) abstract argumentation frameworks (Sect. 11.4) as a starting point. He defines a value-based argumentation framework as a framework in which each argument has an associated (abstract) value. The idea is that values associated with an argument are promoted by accepting the argument. For instance, in a parliamentary debate about a tax raise, it can be argued that accepting the raise will promote the value of social equality, while the value of enterprise is demoted. In an audience-specific argumentation framework, the preference ordering of the values can depend on an audience. For instance, the Labour Party may prefer the value of social equality, and the Conservative Party that of enterprise.

Bench-Capon continues to model *defeat for an audience*: an argument A defeats an argument B for audience a if A attacks B and the value associated with B is not preferred to the value associated with A for audience a . In his model, an attack succeeds, for instance, when the arguments promote the same value, or when there is no preference between the values. Dung's notions of argument acceptability, admissibility, and preferred extension are then redefined relative to audience attack.

Bench-Capon uses a value-based argumentation framework with two values "red" and "blue" as an example (Fig. 11.15). The underlying abstract argumentation framework is the same as that in Fig. 11.9. In its unique preferred extension (which is also grounded and stable), A and C are accepted and B is rejected. For an audience preferring "red," defeat for the audience coincides with the underlying attack relation. In the preferred extension for an audience preferring "red," therefore, A and C are accepted and B is rejected. However, for an audience preferring "blue," A does not defeat B . But, for such an audience, B still defeats C . For a "blue"-preferring audience, A and B are accepted and C is not.

Bench-Capon illustrates value-based argumentation by considering the case of a diabetic who almost collapses into a coma by lack of insulin and therefore takes

³³ In AI and law, the importance of the modelling of the values and goals underlying legal decisions was already acknowledged by Berman and Hafner (1993).

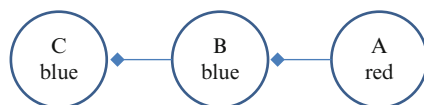


Fig. 11.15 A value-based argumentation framework with two values (Adapted from Bench-Capon 2003)

another diabetic’s insulin after entering her house. He analyzes the case by discussing the roles of the value of property right infringement as opposed to that of saving one’s life.

Bench-Capon and Sartor (2003) have used the value-based perspective in a treatment of legal reasoning that combines rule-based and case-based reasoning (see Sects. 11.8 and 11.9). Legal reasoning takes the form of constructing and using a theory that explains a decision in terms of the values promoted and demoted by the decision. Precedent decisions have the role of revealing preferences holding between factors. This is similar to the role of precedents in HYPO that reveal how the factors in a precedent case are weighed. In Bench-Capon and Sartor’s approach, the factor preferences in turn reveal preferences between values. The resulting preferences can then be used to decide new cases.

11.11 Argumentation Support Software

When studying argumentation from an artificial intelligence perspective, it can be investigated how software tools can perform or support argumentative tasks. Some researchers in the field of argumentation in AI have openly addressed themselves to building an artificial arguer. The most prominent among them is John Pollock (see also Sect. 11.3.2), who titled one of his books about his OSCAR project ambitiously *How to Build a Person* (Pollock 1989).³⁴ Most researchers, however, have not aimed at realizing the grand task of addressing the so-called “strong AI” problem of building an intelligent artifact that can perform any intellectual task a human being can. Instead of building software mimicking human argumentative behavior, the more modest aim of supporting humans performing argumentative tasks was chosen. A great deal of research has been aimed at the construction of argumentation support software. Here we discuss three recurring themes: argument diagramming in software, the integration of rules and argument schemes, and argument evaluation.³⁵

³⁴ The book’s subtitle adds modestly: *A Prolegomenon*.

³⁵ The reviews by Kirschner et al. (2003), Verheij (2005b), and Scheuer et al. (2010) provide further detail about argumentation support software.

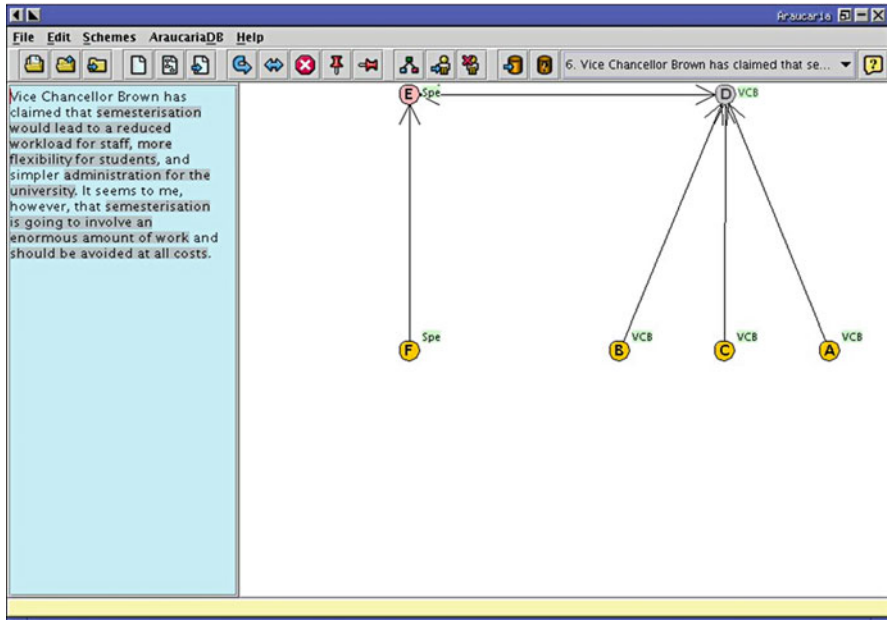


Fig. 11.16 Boxes and arrows diagramming: the Araucaria system (Source: <http://araucaria.computing.dundee.ac.uk/>, 25 July 2012)

11.11.1 Argument Diagramming in Software

In the literature on argumentation support software, much attention has been paid to argument diagramming. Different kinds of argument diagramming styles have been proposed, many inspired by non-computational research on argument diagrams. We shall discuss three styles: boxes and arrows, boxes and lines, and nested boxes.

The first style of argument diagramming uses boxes and arrows. Argumentative statements are enclosed in boxes, and their relations are indicated by arrows. A common use of arrows is to indicate the support relation between a reason and a conclusion. An example of a software tool that uses boxes and arrows diagrams is the Araucaria tool by Chris Reed and Glenn Rowe (2004) (Fig. 11.16). The Araucaria tool has been designed for the analysis of written arguments. Vertical arrows indicate reasons and their conclusions, and horizontal bidirectional arrows indicate conflicts between statements. The Araucaria software was one step in the development by the Dundee Argumentation Research Group, led by Reed, of open source argumentation software. For this purpose, a representation format, called the *argument markup language* (AML), has been developed that allows for the exchange of arguments and their analyses using contemporary Internet technology. The format also allows for the exchange of sets of argument schemes (see Sect. 11.6) that can be used for argument analysis. Other developments concerning machine-readable argument representation formats are the *argument*

interchange format (Chesñevar et al. 2006) and *ArgDF*, a proposal for a language allowing for a World Wide Argument Web (Rahwan et al. 2007). One aim of the latter work is to develop classification systems for arguments, using ontology development techniques in Artificial Intelligence. In AI, an “ontology” is a systematic conceptualization of a domain, often taking the form of a hierarchical system of concepts and their relations.

Another example of a system using boxes and arrows is the Hermes system (Karacapilidis and Papadias 2001), an extension of the Zeno system (Gordon and Karacapilidis 1997). Both Hermes and Zeno have been inspired by the IBIS approach. In IBIS, an abbreviation of Issue-Based Information Systems (Kunz and Rittel 1970), problems are analyzed in terms of issues, questions of fact, positions, and arguments. The focus is on what Rittel and Webber (1973) call *wicked problems*: problems with no definitive formulation and no definitive solutions. Hence a goal of IBIS and systems such as Hermes and Zeno is to support the identification, structuring, and settling of issues.

The second style of argument diagramming uses boxes and lines. In a boxes and lines style of argument diagramming, argumentative statements are depicted in boxes and their relations are indicated by (undirected) lines between them. This diagramming style abstracts from the directionality between statements, e.g., from a reason to a conclusion, or from a cause to an event. An example of a tool using the boxes and lines style is the Belvedere system (Suthers et al. 1995; Suthers 1999). A goal of the system was to stimulate the critical discussion of science and public policy issues by middle school and high school students, taking the cognitive limitations of the intended users into account. Such limitations include difficulty in focusing attention, lack of domain knowledge, and lack of motivation. In early versions, the diagrams were richly structured: there were links for support, explanation, causation, conjunction, conflict, justification, and undercutting. Link types could be distinguished graphically and by label. To prevent unproductive discussions about which structure to use, the graphical representation was significantly simplified in later versions (Suthers 1999). Two types of statements were distinguished, data and hypotheses, and two link types, expressing a consistency and an inconsistency relation between statements. Figure 11.17 shows an example of a Belvedere screen using an even further simplified format with one statement type and one link type.

The third style of argument diagramming uses nested boxes. In this style, too, the argumentative statements are enclosed in boxes, but their relationships are indicated by the use of nesting. An example of the use of nested boxes is the Room 5 tool designed by Loui, Norman, and a group of students (Loui et al. 1997). The Room 5 system aimed at the collaborative public discussion of pending Supreme Court cases. It was Web based, which is noteworthy as the proposal predates Google and Wikipedia. In its argument diagramming format, a box inside a box expresses support, and a box next to a box indicates attack. In the argument depicted in the Room 5 screen shown in Fig. 11.18, for instance, the punishability of John is supported by the reason that he has stolen a CD and attacked by the reason that he is a minor first offender.

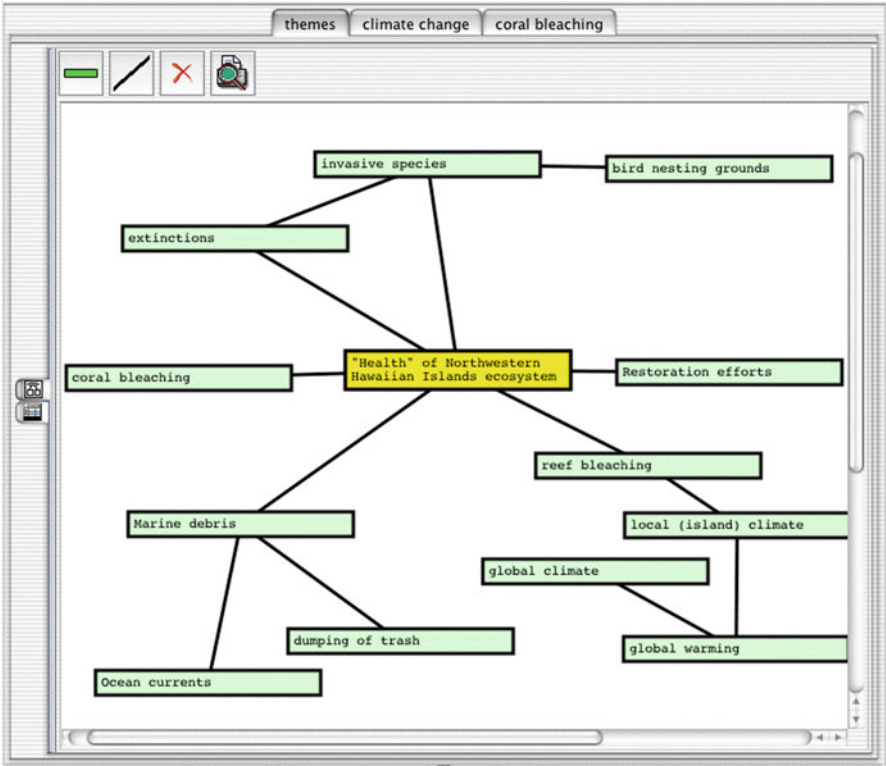


Fig. 11.17 Boxes and lines diagramming: the Belvedere 4.1 system (Source: <http://belvedere.sourceforge.net/>, 25 July 2012)

Room 5

Example

Modify

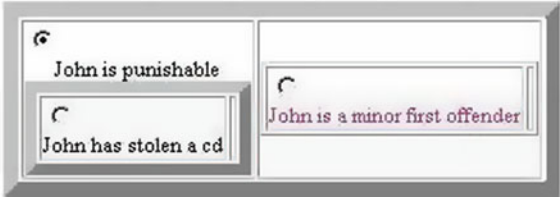


Fig. 11.18 Nested boxes diagramming: the Room 5 system (Screenshot of Room 5, as shown in Verheij (2005b). See also Bench-Capon et al. (2012))

Fig. 11.19 An elementary argument step as an instance of a schematic argument

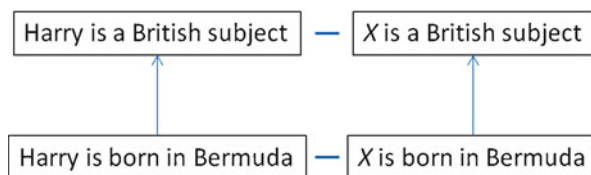
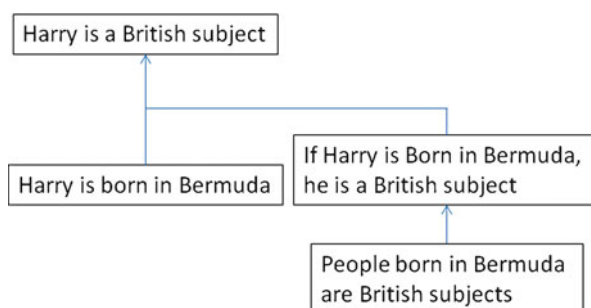


Fig. 11.20 Using a conditional sentence



11.11.2 Integration of Rules and Argument Schemes

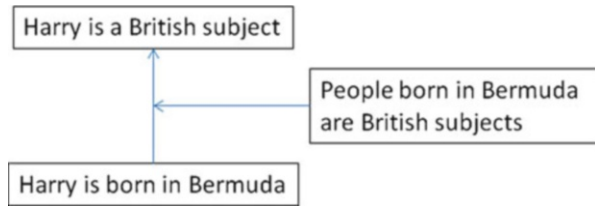
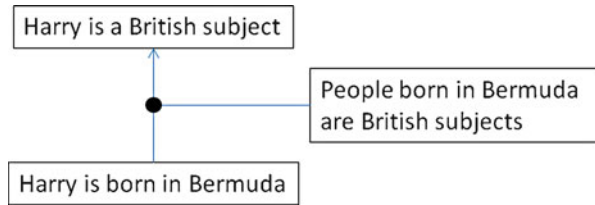
The integration of rules and argument schemes in argument diagramming software has been addressed in different ways: by the use of schematic arguments, conditional sentences, nested arrows, and rule nodes. Consider, for instance, the elementary argument that Harry is a British subject because he is born in Bermuda (borrowed from Toulmin) and its underlying rule (or “warrant” in Toulmin’s terminology) that people born in Bermuda are British subjects.

A first approach is to consider such an argument as an instance of a scheme that abstracts from the person Harry in the argument. In Fig. 11.19, an associated schematic argument is shown to the right of the argument about Harry. In the schematic argument, *X* appears as a variable that serves as the placeholder of someone’s name. In software, the schematic argument is normally not shown graphically. For instance, in Araucaria, the schematic arguments are text files and can be used to annotate argument instances. The schematic arguments appear at a level separate from the arguments themselves; hence, they constitute a kind of meta-arguments. As a result, they are not themselves the subject of debate.

A second approach uses conditional sentences. The conditional sentence that expresses the connection between reason and conclusion is made explicit as an auxiliary premise. This conditional sentence can then be supported by further arguments, such as a warrant (as in Fig. 11.20) or a backing. This approach is, for instance, proposed in the *Rationale*³⁶ tool developed by van Gelder and his collaborators (van Gelder 2007).

A third approach uses nested arrows. The arrows are treated as graphical expressions of the connection between the reason and conclusion and can hence

³⁶ <http://rationale.austhink.com/>

Fig. 11.21 *Nested arrows***Fig. 11.22** *Rule nodes*

be argued about. In Fig. 11.21, for instance, the warrant has been supplied as support for the connection between reason and conclusion. This approach has a straightforward generalization when support and attack are combined (Sect. 11.5.5). The *ArguMed* tool developed by Verheij (2005b) uses this approach.

A variation of the nested arrows approach uses rule nodes (Fig. 11.22), instead of nested arrows. The *AVERs tool* (van den Braak et al. 2007) uses this approach.

11.11.3 Argument Evaluation

In argumentation software, different strategies for argument evaluation have been implemented. Some tools choose to leave argument evaluation as a task for the user of the system. For instance, in the *Rationale* system (van Gelder 2007), a user can indicate which claims follow or do not follow given the reasons in the diagram. Specific graphical elements are used to show the user's evaluative actions.

In several other systems, some form of automatic evaluation has been implemented. Automatic evaluation algorithms can be logical, or numeric.

Logical evaluation algorithms in argumentation support tools have been grounded in versions of argumentation semantics (see Sect. 11.4.1). For instance, *ArguMed* (Verheij 2005b) computes a version of stable semantics. Consider, for instance, Pollock's example of an undercutting defeater about red lights (see Sect. 11.3.2). *ArguMed*'s evaluation algorithm behaves as expected: when the reason that the object looks red is assumed, the conclusion that the object is red will be justified, but that will no longer be the case when the defeater is added that the object is illuminated by a red light. A typical property of logical evaluation algorithms is reinstatement: when a defeating attacker of an initial argument is successfully attacked, the initial argument will no longer count as defeated and therefore be reinstated.

Numeric evaluation algorithms have been based on the numeric weights of the reasons supporting and attacking conclusions. A weight-based numeric evaluation algorithm has, for instance, been implemented in the Hermes system (Karacapilidis and Papadias 2001). In Hermes, positions can be assigned a numeric score by adding the weights of active pro-positions and subtracting the weights of active con-positions. A proof standard can be used to determine an activation label of a position. In the proof standard called *preponderance of evidence*, for instance, a position is active when the active pro-positions outweigh the active con-positions.

A numeric evaluation algorithm of a different kind has been implemented in the so-called “Convince me” system. It uses ECHO, which is a connectionist version of Thagard’s (1992) theory of explanatory coherence. In Convince me, statements are assigned numerical values by a stepwise constraint satisfaction algorithm. In the algorithm, incremental changes of the default weights of a statement are made by considering the excitatory and inhibitory links connected to a statement. When changes become too small to be taken into account (or computation is taking too long), the algorithm stops.

11.12 Burden of Proof, Evidence, and Argument Strength

Some arguments are more successful than others. An argument can meet or not meet the burden of proof fitting the circumstances of the debate. An argument can be founded on better evidence than another. An argument can also be stronger than another. In this section, we address the topics of *burden of proof*, *evidence*, and *argument strength*.

11.12.1 Burden of Proof and Evidence

The topic of burden of proof is strongly connected to the dialogical setting of argumentation. A burden of proof is assigned to a party in an argumentative dialogue when the quality of the arguments produced in the dialogue depends in part on whether the arguments produced by that party during the dialogue meet certain constraints. Such constraints can be procedural, e.g., requiring that a counterargument is met by a counterattack, or material, e.g., requiring that an argument is sufficiently strong in the light of the other arguments. Constraints of the latter, material, and non-procedural type are also referred to as *proof standards*.

The topic of burden of proof is especially relevant in the law, as argumentation in court is often constrained by burden of proof constraints. As a result, in legal theory the topic has been studied extensively. The topic has also been addressed in AI approaches to argumentation, in particular by researchers connected to the field of AI and law (see also Sect. 11.7.1). In the Carneades argumentation model (Gordon et al. 2007), for instance, statements are categorized using three proof standards:

SE (scintilla of evidence). A statement meets this standard if and only if it is supported by at least one defensible pro argument.

BA (best argument). A statement meets this standard if and only if it is supported by some defensible pro argument with priority over all defensible con arguments.

DV (dialectical validity). A statement meets this standard if and only if it is supported by at least one defensible pro argument and none of its con arguments are defensible.

A theme related to proof standards is argument accrual. What happens when there are several arguments for a conclusion? See [Sect. 11.3.3](#), where research addressing the relation between argument defeat and accrual is discussed.

AI models of argumentation have been helpful in clarifying distinctions made in legal theory. Prakken and Sartor in particular have in a series of articles (Prakken and Sartor 2007, 2009) contributed to the explication of different forms of burden of proof. They distinguish a *burden of persuasion*, a *burden of production*, and a *tactical burden*. A burden of persuasion requires that a party prove a statement to a specified degree (the standard of proof) or run the risk of losing on the issue at the end of the debate. A burden of production has been assigned to a party when the party is required by law to provide evidence for a certain claim. Burdens of persuasion and burdens of production are assigned by the applicable law. The tactical burden of proof depends on a party's own assessment of whether sufficient grounds have been adduced about a claim made by the party. Prakken and Sartor connect these different notions to a formal dialogue model of argumentation.

11.12.2 Probability and Other Quantitative Approaches to Argument Strength

Argument strength can be considered by using quantitative approaches. For instance, a conditional probability $p(H|E)$, expressing the probability of a hypothesis H given the evidence E , can be interpreted as a measure of the strength of the argument for the hypothesis based on the evidence. The idea is that higher values of $p(H|E)$ make H more strongly supported when given E . This interpretation of argument strength is associated with what is called *Bayesian epistemology* (Talbot 2011). Bayesian epistemology provides in the following way an interpretation of the relevance of additional evidence, say E' : additional evidence E' strengthens the argument E for H when $p(H|E \wedge E') > p(H|E)$. In this interpretation, Bayes' theorem:

$$p(H|E) = p(E|H) \times p(H)/p(E)$$

connects the strength of the argument from E to H and that of the argument from H to E , thereby reversing the direction of the arrow. This relation is helpful when the values of $p(E|H)$, $p(H)$, and $p(E)$ are available or when they are more easily established than $p(H|E)$ itself. Bayesian epistemology also provides a perspective on the comparison of hypotheses given additional evidence. When there are two hypotheses H and H' , the odds form of Bayes' theorem can be used to update the

odds of the hypotheses in light of new evidence E . The following relation shows how the prior odds $p(H)/p(H')$ is connected to the posterior odds $p(H|E)/p(H'|E)$:

$$p(H|E)/p(H'|E) = (p(H)/p(H')) \times (p(E|H)/p(E|H'))$$

This formal relation is helpful when the prior odds $p(H)/p(H')$ and the values of $p(E|H)$ and $p(E|H')$ are available.

Pollock has argued against a probabilistic account of argument strength (e.g., Pollock 1995, 2006, 2010), referring to this position as “generic Bayesianism” or “probabilism.” Pollock argues that in a probabilistic account, we would be justified in believing a mathematical theorem even before it is proven. This is especially absurd in cases such as Fermat’s last theorem that remained a conjecture for centuries before Wiles finally could complete a proof in the 1990s. Fitelson (2010) defends a probabilistic account against this and other criticisms advanced by Pollock.

Zukerman et al. (1998) have discussed the possibility of generating arguments from Bayesian networks, which are a widely studied tool for the representation of probabilistic information. Riveret et al. (2007) consider success in argument games in connection with probability. Dung and Thang (2010) have presented an approach to probabilistic argumentation in the setting of dispute resolution. Verheij (2012) has proposed a formal theory of defeasible argumentation in which logical and probabilistic properties are connected. Hunter (2013) discusses a model of deductive argumentation with uncertain premises.

11.12.3 Evidence and Inference to the Best Explanation

When an argument is aimed at establishing the truth, empirical evidence can be used to support alleged facts. For instance, a witness’s testimony can provide evidence for the claim that the suspect was at the scene of a crime, a clinical test can provide evidence against a medical diagnosis, and the outcome of a laboratory experiment can be evidence confirming (or falsifying) a psychological phenomenon. The conclusions based on the available evidence can be regarded as hypothetical explanations for the occurrence of the evidence. As a result, reasoning on the basis of evidence is a specimen of what Peirce referred to as *abductive reasoning*, or *inference to the best explanation*: reasoning that goes from data describing something to a hypothesis that best explains or accounts for the data (Josephson and Josephson 1996, p. 5). Josephson and Josephson conceive of inference to the best explanation as a kind of argument scheme (see Sect. 11.6):

D is a collection of data (facts, observations, givens).
 H explains D (would, if true, explain D).
 No other hypothesis can explain D as well as H does.
 Therefore, H is probably true.
 (Josephson and Josephson 1996, p. 5)

The explanatory connection between D and H is often regarded as going against the causal direction. For instance, a causal and expectation-evoking rule “If there is a fire, then there is smoke” can be used to infer, or argue for, the effect “there is smoke” after observing the cause “there is fire.” The causal rule has an evidential, explanation-evoking counterpart, “If there is smoke, then there is a fire,” that can be used to infer (argue for) the explanation “there is a fire” after observing “there is smoke.” Arguments based on causal or evidential rules are typically defeasible: not all fires generate smoke, and not all smoke stems from a fire.

In artificial intelligence, the distinction between causal and evidential rules has been emphasized by Pearl (1988, p. 499f.). He argues that special care is needed when mixing causal and evidential reasoning. To make his point, Pearl uses the following examples:

Bill showed slight difficulties standing up, so I believed he was injured.
 Harry seemed injured, so I believed he would be unable to stand up.

The former uses the evidential pathway from the observation of Bill’s difficulties in standing up to the explanation that he is injured and the latter the reverse causal pathway from the observation of Harry’s injuries to the effect that he is unable to stand up. The question is then addressed whether it is likely that Bill and Harry are drunk, drunkenness being a second cause for difficulties in standing up, independent from injury. Both Bill’s and Harry’s intoxicated state could be argued for using the evidential rule “If someone has difficulties standing up, then he may be drunk.” However, for Bill the conclusion that he may be drunk seems more likely than for Harry, since for Bill both explanations for his difficulties in standing up, namely, injury or being drunk, seem to be reasonable, whereas for Harry drunkenness is a less likely hypothesis now that an injury has been observed. The distinction between causal and evidential rules has played a central role in Pearl’s thinking about causality (Pearl 2000/2009), in relation with the probabilistic modelling tool of Bayesian Networks (see Jensen and Nielsen 2007; Kjaerulff and Madsen 2008). Bayesian Networks have been connected to the modelling of argumentation with legal evidence by Hepler et al. (2007) and by Fenton et al. (2012) (see also Taroni et al. 2006).

The distinction between causal and evidential rules has been used in the formalized hybrid argumentative-narrative model of reasoning with evidence developed by Bex and his colleagues (Bex et al. 2010; Bex 2011). In this model, the elements of a scenario, or narrative, describing how a crime may have been committed, can be supported by arguments grounded in the available evidence. Causal connections between the elements of a scenario contribute to its coherence. It is possible that more than one scenario is available, each scenario with different evidential support and a different kind of coherence. Bex and Verheij (2012) have presented the argumentative-narrative model in terms of argument schemes and their associated critical questions (see Sect. 11.6).

11.13 Applications and Case Studies

A first reason for the popularity of argumentation research in the field of artificial intelligence is that it has led to theoretical advances. A second reason is that the theoretical advances have been corroborated by a variety of interesting applications and case studies, including advances in natural language processing. We give some examples.

Fox and Das (2000) provided a book-length study of AI technology in medical diagnosis and decision making, with much emphasis on the argumentative aspects (see also Fox and Modgil 2006, where argumentation-based decision making is used to extend the Toulmin model). Aleven and Ashley (1997a, b) developed a case-based argumentation tool that was empirically tested for its effects on learning. Buckingham Shum and Hammond (1994) approached the design of artifacts such as software as an argumentation problem. Grasso et al. (2000) worked on argumentative conflict resolution in the context of health promotion. Teufel (1999) has worked on the problem of automatically estimating a sentence's role in argumentation, using a model of seven text categories called *argumentative zones*. Mochales Palau and Moens (2009) developed software for the mining of argumentative elements in legal texts. Hunter and Williams (2010) investigated the aggregation of evidence in a healthcare setting. Grasso (2002) and Crosswhite et al. (2004) have worked on the computational modelling of rhetorical aspects of argument. Reed and Grasso (2007) have collected argumentation-oriented research using natural language techniques. They discuss, for instance, the generation of argumentative texts as studied by Elhadad (1995), Reed (1999), Zukerman et al. (1998), and Green (2007).

Rahwan and McBurney (2007) edited a special issue on argumentation technology of the journal *IEEE Intelligent Systems*. Application areas addressed in the issue are medical decision making, emotional strategies to persuade people to follow a healthy diet, ontology engineering, discussion mediation, and Web services. In the 2012 edition of the COMMA conference proceedings series on the computational modelling of argument, a separate section was devoted to innovative applications. The topics included automatic mining of arguments in opinions, a learning environment for scientific argumentation, semiautomatic analysis of online product reviews, argumentation with preferences in the setting of eco-efficient biodegradable packaging, hypothesis generation from cancer databases, sense making in policy deliberation, music recommendation, and argumentation about firewall policy. For applications focusing on argumentation support and facilitation, the reader is referred to Sect. 11.11.

In the domain of AI and law, theories and systems were developed and tested by the use of case studies. For instance, McCarty (1977, 1995) analyzed a seminal case in US tax law (Eisner v. Macomber, 252 U.S. 189 (1920)). In that case, the US Supreme Court decided that a federal rule of tax law was invalid. McCarty's aims were set high, namely, to build a software implementation that could handle a number of elusive, argumentative aspects of legal reasoning, illustrated in the majority opinion and dissenting opinions concerning the issues in this case. Quoting McCarty (1995):

1. Legal concepts cannot be adequately represented by definitions that state necessary and sufficient conditions. Instead, legal concepts are incurably “open-textured.”
2. Legal rules are not static, but dynamic. As they are applied to new situations, they are constantly modified to “fit” the new “facts.” Thus the important process in legal reasoning is not theory application, but theory construction.
3. In this process of theory construction, there is no single “right answer.” However, there are plausible arguments, of varying degrees of persuasiveness, for each alternative version of the rule in each new factual situation.

Berman and Hafner (1993) studied the 1805 *Pierson v. Post* case concerning the ownership of a dead fox chased by Post, but killed and taken by Pierson. They emphasize the teleological aspects of legal argumentation, in which the goals of legal rules and decisions are taken into account. Bex (2011) used the Anjum case, a Dutch high-media-profile murder case, to test his proposal for a hybrid argumentative-narrative model of reasoning with evidence. Atkinson (2012) edited an issue of the journal *Artificial Intelligence and Law* on the modelling of a 2002 case about the ownership of a baseball, representing a value in the order of a million dollars, being the one that Barry Bonds hit when he broke the record of homeruns in one season (*Popov v Hayashi*).

11.14 The Need for Continued Collaboration

It has become clear that there are a great many issues that can be fruitfully researched if argumentation and artificial intelligence scholars cooperate (Reed & Norman, Eds., 2004b). One could think that arguments between humans have to be the area of argumentation theory, and arguments between machines (programs) have to be the area of artificial intelligence theory, and that never the twain need to meet, but one has only to think of discourse between humans and machines to see the inanity of such a conception. To achieve such a thing as an argumentation machine, both disciplines need to work side by side. And it is not just the traditionally logic-related or formalized part of argumentation that is involved: one also has to take in Toulmin’s model and other theories of argumentation structures and argument schemes, the role of emotion in argument, and the rhetorical dimension of argumentation. All these issues are being studied in the interdisciplinary field of argumentation and computation.

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12.1 Broader Disciplinary and International Scope

There are a great number of contributions to the study of argumentation that deserve to be mentioned which are not part of the generally recognized research traditions we have discussed in the previous chapters. For the most part these contributions are less familiar to the broader circle of argumentation theorists because they either stem from disciplines related to argumentation theory or have been developed areas which are not part of the Anglophone world. Some of them deal with a subject matter different from argumentation in which argumentation plays nevertheless an important role. Others are part of research projects on

argumentation carried out in academic communities outside the Anglophone world. It is worthwhile to conclude the overview of the state of the art in argumentation theory given in this volume with a brief discussion of the main characteristics of these contributions.

First, we will pay attention to research conducted in disciplines different from argumentation theory or by researchers who are not argumentation theorists, which is closely linked to the study of argumentation, so that it is useful to explore its relationship with argumentation theory. Such a close connection exists, for instance, with the flourishing approach to the study of discourse known as *critical discourse analysis*. The relationship between critical discourse analysis and argumentation theory will be discussed in [Sect. 12.2](#). Next, in [Sect. 12.3](#), we focus on the connection with argumentation theory of the prolific scholarship concerning historical controversies in science and other areas designated as *historical controversy analysis*. In [Sect. 12.4](#), we discuss the relations of the empirical tradition of *persuasion research* and related types of quantitative research with argumentation theory. In [Sect. 12.5](#), we turn to a development which has taken place more recently, the so-called argumentative turn in cognitive psychology, because in the future this development may lead to interesting combinations of insights from argumentation theory and insights from psychology.

Argumentation is studied all over the world by scholars from various intellectual backgrounds. Some of these scholars approach argumentation from a philosophical angle, generally adopting a normative perspective. Other scholars choose a rhetorical angle, usually with the purpose of analyzing specific argumentative practices. Still others favor a linguistic angle, aiming for a description of the functional use of elements of discourse in different kinds of argumentative practices. Most topics in the study of argumentation are in fact examined from various perspectives by means of various kinds of approaches. This goes, for example, for a topic such as relevance but also for unexpressed premises, argument schemes, and argumentation structures. In the examination of some other topics, such as the cognitive processing of argumentative discourse, the stylistic aspects of argumentation, the acquisition and teaching of argumentative skills, and the use of argumentation in special fields, specific types of approaches seem dominant. It is striking that in all cases just mentioned, a great number of authors have contributed a vast amount of publications.

In discussing argumentation research carried out in different parts of the world, we will start from the different kinds of native languages and communicative environments of the researchers. Our overview takes off with the study of argumentation in the Nordic countries. Beginning with Denmark, we sketch in [Sect. 12.6](#) the state of the art in argumentation theory in Scandinavia and Finland. In [Sect. 12.7](#), argumentation studies in the German-speaking countries which are not part of the theoretical approaches discussed earlier are brought to the fore. They include contributions from Germany, Austria, and the German-speaking part of Switzerland.

The prominent pragma-dialectical theory of argumentation has already been dealt with in [Chap. 10](#), “[The Pragma-Dialectical Theory of Argumentation](#)”, but

there is still other scholarly work left to report about that is conducted in Dutch-speaking areas. In [Sect. 12.8](#), we deal with studies of argumentation from the Netherlands and the Dutch-speaking part of Belgium. Although the linguistic tradition dominant in French argumentation theory is already treated in [Chap. 9, “Linguistic Approaches”](#), various other interesting lines of approach are developed in France and the French-speaking parts of Switzerland, Belgium, and Canada. They are discussed in [Sect. 12.9](#). Argumentation research conducted by Italian scholars which has not already been discussed when we reported about linguistic approaches to argumentation in [Chap. 9, “Linguistic Approaches”](#) is treated in [Sect. 12.10](#).

In [Sect. 12.11](#), we discuss the study of argumentation in Eastern Europe, concentrating on developments in Poland, Hungary, Slovenia, Croatia, Romania, Bulgaria, and Macedonia. In [Sect. 12.12](#), the study of argumentation in Russia and other parts of the former USSR is at issue. This means that prominent research that has been conducted in Russian research centers such as Moscow and St. Petersburg will be discussed but also argumentation research conducted in other former Soviet republics, such as Armenia, where modern argumentation theory in this part of the world started.

In [Sect. 12.13](#), we concentrate on argumentation research in Spain and the Spanish-speaking countries of Latin America, paying specifically attention to developments in Chile, Argentina, Colombia, and Mexico. A similar overview of the state of the art in argumentation theory in the Portuguese-speaking countries is presented in [Sect. 12.14](#), proceeding from a discussion of the state of the art of argumentation theory in Portugal to argumentation studies in Brazil.

In [Sect. 12.15](#), we discuss some remaining contributions to the study of argumentation stemming from Israel, which are not treated in other chapters of this volume. Recent developments in argumentation theory in the Arab world are discussed in [Sect. 12.16](#), going on from early research in Morocco to activities in other Arab countries.

In [Sect. 12.17](#), we provide an overview of argumentation studies in Japan, which are as a rule linked with rhetoric and the American debate tradition. The study of argumentation in China and its connections with logic and Western argumentation theory are the focus of attention in [Sect. 12.18](#).

12.2 Critical Discourse Analysis

Critical discourse analysis (CDA) refers to a body of work by scholars with a background mainly in linguistics who aim to analyze from a critical perspective the ways in which language is used in practice. According to Teun A. van Dijk, one of the leading protagonists of critical discourse analysis, they focus on “social problems, and especially [on] the role of discourse in the production and reproduction of power abuse or domination” (2001, p. 96). Critical discourse analysis seeks to have an effect on social practice and social relationships of disempowerment, dominance prejudice, and discrimination and therefore “sees itself as politically involved research with an emancipatory requirement”

(Titscher et al. 2000, p. 147).¹ Instead of being characterized by one shared approach or method, various strands of research can be distinguished in critical discourse analysis. Most relevant to argumentation theory are Ruth Wodak and Martin Reisigl's discourse-historical approach (Wodak 2009; Reisigl and Wodak 2009) and the argumentative approach of critical discourse analysis developed by Isabela and Norman Fairclough (Fairclough and Fairclough 2012).

All research in critical discourse analysis concentrates on the relationship between text and context. According to the discourse-historical approach, a speech event can only be properly understood if its manifest and latent meanings (implicatures, presuppositions, allusions, etc.), which are crucial to a critical analysis, are all read in context. Therefore, in critically analyzing speech events all contextual levels on which these speech events function need to be taken into account, together with the historical social and political backgrounds against which the speech events have come into being. This means that the reference points used in the discourse-historical approach in contextualizing speech events include not only their immediate physical and linguistic environment but also other speech events they are related to and the wider historical and sociopolitical framework in which they are embedded. Argumentation strategies are explicitly included among the discursive strategies by which individuals or groups present themselves and others positively or negatively in the discourse that are identified and examined in the discourse-historical approach (e.g., Reisigl and Wodak 2001).

In an essay about the possibilities of combining critical discourse analysis with the pragma-dialectical approach to argumentation, Constanza Ihnen and John Richardson (2011) point out that pragma-dialectics and critical discourse analysis, in particular the discourse-historical approach, have a lot in common. They share, for instance, the assumptions that language use is a goal-oriented activity, subjected to contextual constraints, and that the use of language is aimed not only at understanding but also at acceptance. In addition, they share a pragmatic linking of the meaning of discourse to the context of use, a strong emphasis on the strategic aspects of discourse, and an explicit concern with evaluation or "critique."² Recognizing the advantages involved in using theoretical instruments from pragma-dialectics (van Eemeren 2010) in critical discourse analysis, Ihnen and Richardson advocate their application of insights from this argumentation theory to

¹ A critical evaluation of critical discourse analysis is given by Widdowson (1998). In his view, there is no coherent theory behind the claimed relationships between linguistic phenomena and ideology, the assumptions concerning ideological reproduction are based on a naïve and untenable version of the Sapir-Whorf hypothesis, and the ideological interpretation of (selective) linguistic phenomena that is provided has no basis since it cannot be known what the neutral representation of a state of affairs or the author's real intention is.

² Ihnen and Richardson point at a "subtle" difference in the relation between analysis and evaluation or critique: in pragma-dialectics analysis and evaluation are worked out independently, whereas in critical discourse analysis, the results of analysis and critique are often presented simultaneously (2011, p. 237).

a critical analysis of argumentative discourse and the strategic maneuvering taking place in argumentative discourse.³

Several critical discourse analysts have indeed made use of insights from pragma-dialectics in their analyses. Among them are Martin Reisigl and Ruth Wodak, who use the model of a critical discussion in their critical examination of linguistic strategies of argumentation (Reisigl and Wodak 2001). Albert Atkin and John Richardson use the theoretical grounding provided by the pragma-dialectical argument schemes in reconstructing implicit premises and standpoints and identifying the justificatory relations between the reasons that are advanced and the standpoints that are defended (Atkin and Richardson 2007). Important differences between pragma-dialectics and critical discourse analysis are, of course, that the scope of the latter is by definition broader than argumentative discourse.⁴ In addition, instead of one general method, a variety of methods of analysis are used, but also, and more distinctively, critical discourse analysis has an ideological focus⁵ and starting point.⁶

In the linguistically oriented approach to critical discourse analysis developed by Norman Fairclough (2001, 2003) and others, a great deal of attention is paid to differences in the ways in which messages are phrased and their ideological implications. The idea behind this approach, which is sometimes labeled *critical linguistics*, is that the use of a language always involves making choices from the available linguistic potential and that such choices have a certain meaning. Fairclough, who is one of the founding fathers of critical discourse analysis, has made it clear that, to determine this meaning, it is always necessary to compare the formulation that has been chosen with other options that have not been chosen. In *Language and Power*, he formulates a series of questions that can be helpful in interpreting a text critically. They relate to the language functions of representation, interaction, and evaluation and concern the use of vocabulary, the way in which grammar is employed, and certain textual characteristics.⁷ Although Fairclough does not focus on argumentation, his observations concerning the way in which

³ According to Ihnen and Richardson, by providing a theoretical and systematic grounding to interpretive claims, pragma-dialectics can prevent charges against critical discourse analysis of interpretive bias (2011, p. 238).

⁴ Another difference is that in critical discourse analysis, the notion of argument scheme (often referred to as *topos*) usually has a more specific scope than the highly general argument schemes in argumentation theories such as pragma-dialectics.

⁵ In pragma-dialectics, reasonableness and acceptability judgments pertain exclusively to the role that discursive elements play in resolving a difference of opinion on the merits, whereas in critical discourse analysis, they ultimately pertain to their role in the (re-)creation of relations of inequality and disempowerment.

⁶ This ideological starting point, essentially based in critical theory (Habermas), makes some authors fear that in the end the combination of the discourse-historical approach to critical discourse analysis with pragma-dialectical critical rationalism will lead to an incommensurable “epistemological conflict” (Forchtner and Tominc 2012).

⁷ Fairclough’s questions illustrate clearly how in “critical linguistics” critical discourse analysts deal with texts (see also Fowler and Kress 1979; Simpson 1993).

choices in language use affect the meaning of what is said are in fact also highly relevant to the analysis of argumentative discourse, in particular when the focus is on strategic maneuvering.

Together with Isabela Iețcu-Fairclough, who paved the way by including insights from pragma-dialectics in her studies of argumentative discourse and strategic maneuvering (e.g., Iețcu-Fairclough 2008, 2009), Fairclough developed at the end of the first decade of the twenty-first century a new, argumentative approach to the analysis of political discourse in critical discourse analysis. In their book *Political Discourse Analysis*, Fairclough and Fairclough (2012) argue emphatically that in critical discourse analysis, the largely argumentative nature of political discourse and the centrality of practical argumentation had earlier not been sufficiently taken into account. The discourse conducted in the deliberative activity types of the political domain involves in the first place practical argumentation aimed at justifying or criticizing decisions or action claims. In line with pragma-dialectics and its critical conception of reasonableness (van Eemeren and Grootendorst 1992a), Fairclough and Fairclough view a reasonable decision or action claim as the outcome of a dialectical procedure of critical questioning. Following this dialectical procedure is, in their view, the only possible guarantee that a reasonable (although not automatically the best) decision will be achieved.

Drawing on insights concerning argument schemes developed in argumentation theory by Walton (2007) and Walton, Reed, and Macagno (2008), Fairclough and Fairclough suggest a *schema* for practical argumentation in which a normative action claim is defended by premises referring to the circumstances in which the action takes place, a desirable goal and a presumptive means–end relationship. They put this argument schema to good use in critical discourse analysis by employing it as a tool for a reconstructive analysis and evaluation of argumentation put forward in a wide range of texts on the economic crisis in the early twenty-first century.

The argumentative approach that Fairclough and Fairclough have taken enables a reinterpretation of crucial concepts critical discourse analysis has traditionally worked with in terms of argumentation theory. It makes, for instance, clear that, as a process of public justification, legitimation is argumentative by nature; similarly, political visions or imaginaries are goal premises in practical arguments. Power, an ever-present concern of critical discourse analysts, is in this argumentative approach viewed as a reason for action. In the same vein, discourses provide agents with reasons for action: premises in their practical arguments. Thus, practical reasoning is seen as the interface between *agency* and *structure*: In practical reasoning agents draw on discourses which reflect to a large extent social, institutional, or moral orders that have an objective status for the agents. As objective structures, these order-reflecting discourses provide agents with reasons for action that impose constraints on decision-making. According to Fairclough and Fairclough, in political discourse the actors are expected to abide by the norms and commitments that make up the institutional fabric of the political system and constitute the implicit ‘contract’ the citizens are engaged in. The political domain is thus inherently connected with argumentation and deliberation because, being

essentially an institutional order, it involves obligations, commitments, and the like that provide agents with reasons for action. Acting within the political field presupposes the existence of such reasons, specific to the field, which political actors have to take into account in deliberating what to do.

Crucially, the analysis and evaluation of argumentation are in this approach viewed as the appropriate grounding for normative and explanatory social critique, including ideological critique. Critical discourse analysts are out to answer such questions as why certain discourses achieve hegemony, why they go unchallenged, and why they tend to become naturalized as common sense – these questions are part of explanatory critique. The role of power as a reason for action can figure prominently in such analyses. By looking at action claims based on premises that do not withstand critical examination (for instance, unacceptable representations of the context of action, unacceptable goal or value premises, or normative priorities that are not rationally defensible), critical discourse analysts can engage in normative critique. Questions as to whether or not a proposed course of action based on such premises is likely to contribute to human well-being and whether a proposed course of action emerges from (democratic) deliberation free from constraints that prevent a reasonable outcome will also be prominent in this type of analysis. The possibilities for critical questioning of arguments can be viewed as a vehicle for social critique and for the evaluation of arguments – the two are clearly interrelated. In this way, Fairclough and Fairclough are making a fundamental connection between argumentation theory and critical discourse analysis.

12.3 Historical Controversy Analysis

Within the International Association for the Study of Controversies (IASC), controversies are examined by scholars who aim to make enlightening analyses of the way in which a certain controversy comes about, develops, and comes to an end or – not atypically – remains in place. A considerable amount of these analyses concentrate on cases of controversy in the history of science, but due attention has also been paid to other kinds of historic and present-day controversies. Controversies have been studied by means of descriptive (historical or sociological) approaches and by means of normative (philosophical) approaches. Early collections of studies already testify to the plethora of approaches (see Engelhardt and Caplan 1987; Machamer et al. 2000).

Thanks to Marcelo Dascal of Tel Aviv University, who may be considered the intellectual leader of the study of controversies, a growing group of philosophers examines controversies in the history of philosophy and the sciences “by trying to be as descriptive as possible,” not “by way of imposing pre-ordained normative schemata on the historical debates” (Dascal 2001, p. 314). According to Dascal (2001), “controversies are necessary for the formation, evolution and evaluation of philosophical theories, and thereby for the progress [...] of philosophical knowledge” (p. 314). The examination of the nature and the role of controversies in the history of philosophy are therefore relevant for scholars studying philosophical and

scientific development. With Kant, Dascal believes that philosophers should not apply “pure reason to issues that lie beyond its capacity” (p. 313). In his view, they should not try to decide philosophical controversies, but to learn something from controversies about “the limitation and powers of pure reason” (p. 313). A case in point is Dascal’s (2001) analysis of the infamous Searle-Derrida polemic, which, at first glance, may look like an irrational dispute, but proves to be much more – in spite of the sarcastic and bitter tone of debate. In his analysis, Dascal shows exactly where Derrida and Searle diverge, but also points out shared assumptions and beliefs.

According to Dascal (1998), scientific controversies are “the locus where critical activity – essential for science – is exercised and its norms established, applied, and modified” (pp. 15–17). Science has manifested itself in its history as a sequence of controversies and therefore controversies are not anomalies but the “natural state” of science. Systematically investigating scientific controversies is a major task for the philosophy and history of science because these controversies provide the “relevant dialogical context where the meaning of theories is shaped” (p. 17). In controversies, Dascal continues, “entrenched beliefs, data, methods, interpretations, and procedures can be challenged – which paves the way for the possibility of radical innovation” (p. 17). It is by observing and analyzing scientific controversies that “the de facto nature of the workings of scientific rationality (or irrationality) can be determined” (p. 17).⁸ This does not mean, however, that controversy studies are limited to philosophical and scientific polemical exchanges: They should also deal with historical and contemporary social and political conflicts and conflict resolution.

In order to facilitate the analysis of philosophical and scientific controversies, Dascal developed a threefold typology of debates: “discussion,” “dispute,” and “controversy.” In fact, he introduced the category of controversy as a response to the existing dichotomy between discussion and dispute. Traditionally, Dascal (2001, p. 316) claims discussion has been viewed as a rule-based rational procedure, while dispute has been characterized as governed by “extra-rational factors.” He believes that for an analysis of philosophical and scientific polemical exchanges, the third category of controversy is necessary because so many philosophical and scientific debates are rational but there is no general agreement on the rules for the rational procedure, so that they are neither discussions nor disputes.

The most important distinguishing factors underlying Dascal’s three types are “their overall aims, general thematic and hierarchical structure, the way they are conceptualized by the contenders, and the corresponding assumptions about their rules (if any) and their mode or resolution” (2001, p. 314). According to Dascal, a *discussion* is a type of dialogue about a “well-circumscribed topic or problem” (p. 314). The desired end result of a discussion is a “solution which consists in correcting the mistake thanks to the application of procedures accepted in the field (e.g., proof, computation, repetition of experiments, etc.)” (p. 315). A *dispute* starts,

⁸ For the use of historical models in the analysis of controversies, see Dascal (2007).

just like a discussion, with a well-defined problem, but, according to Dascal, the contenders see the confrontation “as rooted in differences of attitudes, feelings, or preferences” rather than in some kind of mistake (p. 315). Because there are no mutually accepted procedures for deciding the dispute, it has no solution and can, in Dascal’s terminology, at best be “dissolved.” This means that the dispute is terminated by an external arbitrary procedure, such as calling the police or throwing dice. In principle, ending, i.e., dissolving, a dispute by some kind of external intervention does not change the contenders’ belief in the correctness and justification of their positions.

A *controversy* is a type of debate that occupies an intermediate position between a discussion and a dispute. According to Dascal (2001), just like in discussions and disputes, in controversies the debate starts with a specific and well-defined problem “but it spreads quickly to other problems and reveals profound divergences” (p. 315). Controversies resemble disputes because the parties realize that a mistake is not at the root of the debate. Because the differences involve “opposed attitudes and preferences, as well as disagreements about the extant methods for problem-solving,” the oppositions between the parties are not perceived simply as mistakes to be corrected, nor are there accepted procedures for deciding these matters – which causes the controversy to continue. However, controversies do not reduce to mere unsolvable conflicts of preferences. In Dascal’s view, the contenders pile up arguments “they believe increase the weight of their positions in light of the adversaries’ objections, thereby leading, if not to deciding the matter in question, at least to tilting the ‘balance of reason’ in their favor” (2001, p. 315). Controversies are neither solved nor dissolved; they are, in Dascal’s terminology, at best “resolved.” Resolution is reached when the contenders decide that one of the positions has been defended best, agree to a modification of the positions, or agree that the nature of the differences has been mutually clarified. Not victory is the objective of a controversy (as in a dispute), nor proof (as in a discussion), but rational persuasion.⁹

The three types of debate can be further distinguished by specifying the differences between the nature of the opposition, the types of procedure that are to be followed, and the ends that are aimed for. Going by their ends, “discussions are basically concerned with establishing the truth, disputes with winning, and controversies with persuading the adversary and/or competent audience to accept one’s position” (Dascal 2001, p. 316). In discussions, the opposition between the conflicting theses is mostly perceived as purely logical, in disputes mostly as “ideological,” i.e., attitudinal and evaluative, and in controversies as involving a broad range of divergences regarding the interpretation and relevance of facts, evaluations, attitudes, goals, and methods. Procedurally, Dascal explains,

⁹The conception of controversy developed by Dascal is to a large extent in line with the view of Crawshay-Williams (1957), discussed in Sect. 3.7, that controversy arises when there is disagreement between the defender of a statement and an attacker of this statement concerning the criteria according to which the statement is to be tested.

discussions are related to a “problem-solving” model, disputes to a “contest” model, and controversies to a “deliberative” model (p. 316). An actual confrontational exchange, by the way, will rarely be a “pure” example of one of these three types; for one reason, because the ways in which the various contenders perceive and conduct a given exchange need not be identical. The models of the three types of debate are therefore to be understood as empirically based prototypes.

From a pragmatic perspective, Dascal (2008) makes a distinction between two strategic uses of dichotomies in controversy debates: “dichotomization” and “de-dichotomization.” *Dichotomization* is “radicalizing a polarity by emphasizing the incompatibility of the poles and the inexistence of intermediate alternatives, by stressing the obvious character of the dichotomy as well as of the pole that ought to be preferred.” *De-dichotomization* consists of showing that the opposition between the poles “can be constructed as less logically binding than a contradiction,” so that “emphasis on possible alternatives is created.” The two debate types, “discussions” and “dispute,” for instance, are traditionally viewed as dichotomously opposed to each other. Because Dascal regards the dichotomous models not sufficient for an account of all varieties of debate, he de-dichotomizes the opposition by adding the non-dichotomous category of “controversy.”

Many scholars studying scientific and other kinds of controversies start from Dascal’s definition of controversy and his typology of debates. Anna Carolina Regner of the Brazilian University of the Sinos River Valley (UNISINOS), for example, uses Dascal’s approach in analyzing the polemic between Darwin and Mivart concerning the origin of species (Regner 2008). In explaining her approach, Regner refers to Pera’s (1994) dialectical view of science, but her approach is, like that of most other controversy scholars, in the first place rhetorical (see also Sect. 12.14).

As Gábor Kutrovátz (2008) observes, “typically, discourse-oriented analyses treat scientific communication in rhetorical terms” under “the umbrella term ‘rhetoric of science’” (p. 231). He notices that “‘the term rhetoric’ carries an undesirable connotation that rhetoricians of science have to confront: it is understood, in a majority of discursive situations, as an ornamental use of language that is able to persuade an audience in contrast to ‘rational’ means of convincing” (p. 234). “Taken in this sense,” Kutrovátz remarks, “what could be more orthogonal to rhetoric than science where claims are to be accepted according to the soundest reasons?” This is why most controversy scholars – in line with a great many argumentation theorists – tend to agree with Pera’s (1994) general conception of rhetoric as the theory and practice of persuasive argumentation.¹⁰

¹⁰ Marras and Euli (2008) discuss the role of refutation and dissuasion in managing conflicts over political and social issues and opt for a replacement of the traditional dissuasion model by a nonviolent model. Their model allows for a taxonomy of six conflict “scenarios,” which resemble different articulations of deliberative communicative activity types from the political domain.

The distinction from the contested meaning is, according to Pera, “intensified by the term’s intimate relation to another term, dialectics, presented here not as an alternative to rhetoric but as the ‘logic of such [persuasive] practice or act’” (1994, p. viii).

As is shown by the essays collected in van Eemeren and Garssen (2008), controversy scholars make clear that controversy always has to do with confrontation and tenacious efforts to put an end to the confrontation by means of argumentation. Intrinsic in a controversy seems to be that it concerns a difference of opinion that is perceived to have acquired a state of quasi-permanency – a state of “lingering on.” The problem of apparent insolubility may even reach a point where it is generally acknowledged that it will be impossible to resolve the difference of opinion. Presumably, in classifying types of controversy, a distinction can be made between different “degrees of being controversial,” with at the highest point a mere squabble and at the lowest point “deep disagreements” comparable with what Woods (1992) calls *standoffs of force five*. Another characteristic of controversies seems to be that one ends up in a controversy rather than starting one.

Just as argumentation theorists are by definition interested in controversy, controversy scholars always pay a great deal of attention to argumentation. Regner, for one, acknowledges that studies such as her analysis of the Darwin–Mivart controversy “fall under a theory of argumentation” (2008, p. 51). This does not mean, however, that controversy scholars always draw the practical consequence from this acknowledgement by actively exploiting in their examinations the analytical and methodical insights argumentation theory has to offer.

Most controversy scholars who are inclined to connect their studies with the study of argumentation and communication take a rhetorical perspective, but they often also refer to pragmatics and discourse analysis. Regner, for instance, states that studies of such polemics as between Darwin and Mivart “cannot avoid contextual (and thus pragmatic) considerations” (2008, p. 51). Without utilizing the pragma-dialectical notion of strategic maneuvering, she analyzes what she calls the “argumentative strategies” employed by Mivart and Darwin and provides useful insights in both parties’ ways of influencing the presumed audience. Some other interesting examples of strategic maneuvering are tackled, in particular with regard to topical selection, by Thomas M. Lessl (2008) of the University of Georgia in his analysis of the controversies concerning evolution and greenhouse warming. In an analysis of a remarkable controversy on civic Jewish rights and the integration of Jewish citizens in Germany at the end of the eighteenth century, Mirela Saim (2008) of McGill University makes a series of interesting observations concerning strategic maneuvering in revealing how the interaction between the parties in a debate can move from discussion to controversy. The German scholar Gerd Fritz (2008) focuses on “the implicit theory of controversy that people apply in their practice” (p. 109). He considers it useful to concentrate on the empirical study of communication principles “to get a more vivid picture of how rationality is put into practice” (p. 110). Some controversy scholars want to

utilize, next to rhetoric, also dialectical and pragmatic angles of approach. One of them is the Brazilian Ademar Ferreira (2008).¹¹ A more recent collection of essays shows an increasing coherence in the theoretical approach that is chosen (Dascal and Boantz 2011).

Conspicuous examples of controversy scholars who explicitly use conceptual instruments from argumentation theory in their analyses are the Hungarian philosophers of science Gábor Kutrovátz and Gábor Á. Zemlén. In “Rhetoric of science, pragma-dialectics, and science studies,” Kutrovátz (2008) argues that the study of scientific communication could benefit from application of insights from argumentation theory as can be found in the pragma-dialectical theory, where dialectical, pragmatic, and rhetorical angles of approach are combined. He emphasizes that starting from a dialectical framework has significant advantages over starting from a purely rhetorical framework when the quality of arguments needs to be taken into account. Kutrovátz observes that as far as argumentation theory goes – he is concentrating on pragma-dialectics – the full potential for different applications (in his case in the realm of scientific argumentation) “still needs to be exploited” (p. 237).

In “Scientific controversies and the pragma-dialectical model,” Zemlén (2008), who is convinced of the “indispensability of rhetorical insights for a meaningful study of scientific controversies” (p. 263), uses pragma-dialectical insights concerning the identification, structure, and strategic use of argumentative moves in reconstructing the Newton–Lucas optical debate in the 1670s to make clear how the analysis of scientific debate can benefit from making use of dialectical insights from argumentation theory.¹² According to Zemlén, using such analytical tools allows historians of science “to move away from treating positions in an abstract space of ideas (like this is the relevance of the notion of crucial experiments for the ‘Newtonian method’), and to locate them in the argumentative discourse” (p. 268). This “radical contextualization” makes it possible to view methodological norms “as responding to their immediate argumentative context – especially if inconsistencies in the use of norms can be found, like in the case of Newton’s use of his crucial experiment” (p. 268).

¹¹ Ferreira (2008) aims to develop a model of scientific dialogical activity that incorporates the concept of controversy and does justice to the language aspects. In his view, the activities of scientists have always been “immersed in controversies” (p. 125). The variety in their cognitive aims and background assumptions “brings what should be a ‘rational discussion’ down to (or up to!) a controversy” (p. 126).

¹² Zemlén, who would like to go even deeper into the rhetorical dimension, comes close to a fully fledged analysis of strategic maneuvering in the pragma-dialectical sense. By revealing the strategic maneuvering that takes place in the Newton–Lucas debate, he shows that such an analysis “can yield novel insights into and better understanding of the historical controversy” (p. 259).

12.4 Persuasion Research and Related Quantitative Research

By far the most well-known type of quantitative research related to argumentation theory is *persuasion research*. Persuasion research has a long tradition, especially in the United States. In that country, since the 1950s empirical studies have been conducted, mostly from a social-psychological perspective. Although in research into persuasiveness argumentation plays an important role, it is certainly not the only factor that is studied. Persuasion research that does focus on argumentation deals with the persuasive effects of the way in which argumentation is presented (*message structure*) and with the persuasive effects of the contents of argumentation (*message content*). In recent years, both types of persuasion research cumulate in large-scale “meta-analyses” (O’Keefe 2006). In Sect. 8.8 of this volume, we give a description of the various kinds of studies in American persuasion research that are relevant to argumentation theory.

Outside the United States, one of the most productive research groups examining the connection between argumentation and persuasion is the team of communication scholars from the University of Nijmegen in the Netherlands. Most of their research concentrates on message content. It is in the first place aimed at describing the persuasiveness of different types of arguments.

Hans Hoeken (2001), for one, examined the perceived and actual persuasiveness of three different types of evidence: anecdotal, statistical, and causal evidence.¹³ His research addresses the relationship between the perception of the quality of an argument and its actual persuasiveness. Participants not only rated the extent to which they accepted the claim, but they also indicated their opinion about the strength of the argument. One would expect these scores to correlate: The type of argument rated as the strongest should also be the most convincing. To find out whether the perception of argument strength corresponds with actual persuasiveness, both variables were measured.

The experimental results indicate that the various types of evidence had a different effect on the acceptance of the claim. However, the differences only partly replicate the pattern of results obtained in other studies. In Hoeken’s study, statistical evidence proved to be stronger than anecdotal evidence. Contrary to expectations, causal evidence proved not to be the most convincing type of evidence. It was in fact just as persuasive as anecdotal evidence and less persuasive than statistical evidence. Corresponding with the actual persuasiveness, statistical evidence is rated as stronger than anecdotal evidence. Ratings of the strength of the argument are in both cases strongly related to the actual persuasiveness. In contrast, causal evidence received higher ratings compared to its actual persuasiveness. It was rated as stronger than anecdotal evidence, despite the fact that both types of evidence yielded similar claim acceptance ratings. The correlation between the

¹³ This research can be seen as an altered replication of research conducted earlier by Baesler and Burgoon (1994).

perceived strength of an argument and its actual persuasiveness is lower for causal evidence compared to the correlations for the other two types of evidence.

Hoeken and Letticia Hustinx (2009) are particularly interested in the persuasiveness of statistical evidence and anecdotal evidence occurring in different types of arguments. They found that, if the evidence is part of an argument by generalization, statistical evidence is more persuasive than anecdotal evidence. If the evidence is part of an argument by analogy, statistical evidence and anecdotal evidence are equally persuasive. However, if the case at issue in the anecdotal evidence is dissimilar from the case at issue in the claim, statistical evidence is again more persuasive.

Jos Hornikx and Hoeken (2007) address the question of whether evidence functions in the same way in different cultures.¹⁴ They report on two experiments concerning the relative persuasiveness of anecdotal, statistical, causal, and expert evidence. In these experiments, the quality of statistical and expert evidence was manipulated. Hornikx and Hoeken conclude that cultural differences do indeed influence the effectiveness in persuasion of different argument types. In both experiments, cultural differences in susceptibility were found. In the first one, strong statistical evidence had more impact on the acceptance of claims by the Dutch participants than it had on their acceptance by the French participants. In the case of weak statistical evidence the Dutch participants and the French participants were equally unwilling to accept the claim. A similar effect was obtained for strong and weak expert evidence: Strong expert evidence had a larger impact on the Dutch participants than on the French participants, whereas weak expert evidence did not have much of an effect on either the Dutch or the French participants.

Hoeken, Rian Timmers, and Peter Jan Schellens (2012) raise the question of what criteria people use to distinguish strong arguments from weak arguments and how these criteria relate to the norms proposed in normative argumentation theory.¹⁵ In an experiment they asked respondents without training in argumentation theory to rate the acceptance of a series of claims about the desirability of a claim supported by an argument from analogy, or an argument from authority, or an argument from consequences. Participants proved sensitive to the violation of most, but not all, criteria specific to argument type. The participants' criteria proved to be in line with the evaluative questions pertaining to these types of argument distinguished in normative argumentation theories.

Not all quantitative empirical studies of argumentation can be qualified as persuasion research. A second type of quantitative research concentrates on the *pre-theoretical quality notions* or *norms of reasonableness* of ordinary arguers. A typical example is the research carried out by van Eemeren, Garssen, and Meuffels to test the intersubjective acceptability of the pragma-dialectical norms

¹⁴ See also Hornikx (2005) and Hornikx and de Best (2011).

¹⁵ See Šorm, Timmers, and Schellens (2007) for a similar study.

for judging the reasonableness of argumentative discourse (see [Sect. 10.12](#)).¹⁶ Judith Sanders, Robert Gass, and Richard Wiseman (1991) are interested in possible differences in the way in which different ethnic groups evaluate in argumentation the strength or quality of warrants. Specifically, they sought to examine whether African Americans, Asian Americans, Hispanic Americans, Middle Eastern Americans, and White Americans evaluate warrant potency differently depending on the type of warrant or the topic of the argument. They compared these assessments with assessments of the same arguments by experts in the field of argumentation and debate (p. 709). In their research, Sanders, Gass, and Wiseman construed a series of arguments in which topic, type of warrant (example, analogy, and cause–effect), and argument strength were varied. Before the test, the argument strength had been assessed by 14 nationally recognized American argumentation scholars. They were presented with arguments on the various topics and asked to classify these arguments according to the type of warrant (example, analogy, cause–effect) and overall argument strength. Arguments that enjoyed consensus in terms of warrant type and argument strength were selected for the experiment. The results indicate that ethnicity alone does not create a preference for argument based on a particular type of warrant.

Dale Hample and Judith Dallinger (1986, 1987, 1991) are interested in the editorial standards people apply in designing their own arguments: If in a given situation a person thinks of half a dozen possible arguments, why are some of them indeed presented and others suppressed? Hample and Dallinger report on a series of studies in which this question was investigated. They stimulated their respondents with lists of possible arguments and asked for their judgments. It was the respondents' task to indicate whether they would accept or reject each of the arguments and what rationale they would use to justify rejection. Among the most frequently reported criteria for rejection of arguments are: “won’t work,” “don’t threaten, bribe, or punish,” “only use true arguments,” and “only use relevant arguments.” There prove to be three main categories of criteria: those related to effectiveness criteria, person-centered criteria, and discourse competences. Hample and Dallinger also looked for predictors that would account for the rationale of preferences. They cautiously conclude that “situation” has considerable impact on endorsement.

Hample and Pamela Benoit (1999) explore which perceptual connection ordinary people make between arguing and fighting. In earlier research they had found that naïve social actors believe that the more explicit an argument is, the more destructive it is for the relationship between the arguers. For these respondents, arguments do not seem to be alternatives to violence; instead, arguments appear to be companions to fights or causes of them. Hample and Benoit intend to explain why in an American context people have the prejudice that “arguments” are typically destructive. Every time people identify something as a paradigm case of

¹⁶ Van Eemeren et al. (1984) conducted empirical research to establish to what extent the recognition of argumentative moves is in argumentative reality facilitated or hampered by factors in the presentation (see [Sect. 10.12](#) of this volume).

arguing, they judge that the episode is potentially hurtful. When the disagreement and the central claim were not explicit, the discourse did not seem to count as an argument (1999, p. 306). The findings in Hample and Benoit suggest that people see arguments as dangerous (threatening) episodes. This shows that naïve social actors who are native speakers of English have a perception of argument that differs from the scholarly understanding of “argument.”

Judith Bowker and Robert Trapp (1992) study laymen’s norms for sound argumentation: Do ordinary arguers apply predictable, consistent criteria on the basis of which they distinguish between sound and unsound argumentation? Bowker and Trapp’s large-scale empirical study into the reasonableness concepts of ordinary arguers consists of five steps. In the first step – eliciting situations characteristic of sound and unsound argument – respondents were asked to respond to an “open” question aimed at making them describe a situation in which another person had attempted to convince them of the acceptability of a standpoint. The respondents were expressly instructed to describe only situations in which the argument put forward was in their opinion good, *irrespective* of whether they had actually been convinced by it. In the second step, a list of descriptive terms was drafted based on the answers given by the respondents as to what is characteristic of sound versus unsound argumentation. In the third step, the long list of descriptive terms was edited. In the fourth step, Bowker and Trapp applied two statistical procedures to reduce the huge quantity of empirical data obtained in the third step to manageable proportions. In the fifth step, again, an explorative data technique was unleashed on this collection of items, resulting in four interpretable factors. These are the factors that finally “must provide insight into the question of how good argumentation distinguishes itself from poor argumentation” (1992, p. 220). Bowker and Trapp’s (1992, p. 228) conclusion is that the judgments of the respondents partially correlate with the reasonableness norms applied by informal logicians such as Johnson and Blair, and Govier.

Margrit Schreier, Norbert Groeben, and Ursula Christmann introduced the concept of *argumentational integrity* to develop ethical criteria for assessing contributions to argumentative discussions in daily life (Schreier et al. 1995). According to this concept, arguments not only have to be valid but also sincere and just. The German researchers conducted a series of experimental follow-up studies on argumentational integrity. In the course of these studies, they tried to develop the concept of argumentational integrity based on the experimental findings. In this sense, their method can be called “empiricistic.”

Schreier, Groeben, and Christmann observe that when during an argumentative discussion one of the parties performs unfair manipulations or knowingly misrepresents the facts or discredits other parties in an attempt to impress their own standpoint, such behavior will, as a rule, be judged negatively by the other participants. According to the researchers, such negative judgments indicate that argumentative discussions are regulated by specific norms and values that have been transgressed by the discussion party concerned.

Theoretically, Schreier, Groeben, and Christmann further develop the concept of argumentative integrity starting from – what they call – the prescriptive use of the term *argumentation*. According to them, the use of this term is based on two

characteristic objectives of an argumentative discussion: rationality and collaboration. The following requirements must be fulfilled to give these two characteristic objectives of argumentation their due:

1. *Formal validity*: Arguments must be valid, both in form and in content.
2. *Sincerity/truth*: The participants in an argumentative discussion must be sincere. This means that they may only express those opinions and convictions they regard as correct (and may only put forward argumentation in support of these opinion and convictions).
3. *Justness at content level*: “[A]rguments must be just with respect to the other participants” (1995, p. 282). An unjust argument could, for instance, discredit the other participant.
4. *Procedural justness*: The argumentative procedure must be undertaken in a just manner, which means that all participants must have equal opportunity to provide their own contributions to the resolution of the difference of opinion, according to their own individual (relevant and defensible) beliefs.

Based on these four requirements, Schreier, Groeben, and Christmann define the concept of argumentational integrity as “the requirement to not consciously violate the argumentative conditions” (1995, p. 276).

A third type of quantitative research that can be distinguished focuses on *cognitive processes*. James Voss, Rebecca Fincher-Kiefer, Jennifer Wiley, and Laurie Ney Silfies (1993), for instance, are concerned with the cognitive processing of arguments. They present a model of informal argument processing and describe experiments that provide support for the model. The main points covered by the model are the following: (1) When a claim is encountered, an individual evaluates its truth value. In this process the individual’s attitude regarding the contents of the claim plays a part. The evaluation goes more rapidly if people strongly agree or disagree with the content of the claim than when there is less certainty regarding their agreement. (2) The claim and the attitude form together a complex that activates reasons related to the claim. The reasons activated tend to provide relatively strong support for the claim and are consistent with a person’s attitude or they are reasons that support rather than oppose the claim. (3) When a claim and a reason are presented together, a person’s knowledge, beliefs, and/or values may be activated. The data indicate that value activation is a function of a person’s perceived strength of the reason–value relations. The model thus emphasizes that components of mental representation, such as knowledge, beliefs, attitudes, and values, play a significant role in processing informal arguments.

Dale Hample, Fabio Paglieri, and Ling Na (2011) are interested in the question of when people are inclined to start a discussion. What factors predict engagement and which factors predict that no argument will be voluntarily forthcoming? People do not always have to argue when arguing is invited – or in pragma-dialectical terms, arguers can find themselves partway into a possible confrontation stage, needing to make the next move. In response to the protagonist’s contribution, we might change the topic, fall silent, concede, or otherwise avoid engagement, or we might express disagreement. Should any of these reactions occur, then the original protagonist might move away from the matter – or initiate the opening stage of the

discussion. In the opening stage, arguers make joint decisions about how to proceed. However, somewhere in the confrontation stage, or in the transition to the opening stage, people must decide whether or not to engage in arguing. The study concerned is a social scientific investigation of when the decision to engage is made and when it is rejected.

Hample, Paglieri, and Na (2011) consider various “costs” and “benefits” of engaging in discussion. The costs of arguing refer to the cognitive effort involved, one’s emotional exposure, and one’s estimates of unwelcome relational consequences. The benefits of arguing refer to what an arguer might get out of the interaction if it were to go well. The likelihood of winning is important in projecting possible benefits to an argument. A key consideration in whether outcomes might be attainable is whether the other arguer is expected to be reasonable, or stubborn or truculent. The *civility* of a possible argument has to do with whether it will be pleasant and productive, or angry and destructive. Whether an argument is thought to be *resolvable* or not has important consequences for relational satisfaction and other valued outcomes. People feel that it is *appropriate* to engage in some arguments but not in others and this has implications for whether participation would be more or less costly. The results of the experiments conducted imply that winning and appropriateness are important predictors for the decision to engage in discussion. Further analysis revealed that winning was far more important than appropriateness. The other person’s expected “reasonability” was relevant in some but not all situations.

In another research project, Susan Kline (1995) tries to identify the argumentative competencies that are important for children to acquire, and to pinpoint the kinds of interactions with parents and peers that facilitate the development of these competencies. Kline examines two hypotheses: (1) “Collaborative influence opportunities will be positively associated with persuasive argument skill. Children who identified more collaborative influence opportunities were also more likely to use sophisticated persuasive arguments to create consensus and facilitate behavioural commitment” (1995, p. 270). (2) “[N]on-collaborative influence opportunities would not be significantly associated with persuasive argument skill” (1995, p. 271). Sixty children were interviewed individually. The interviewers engaged the children in two structured tasks: an influence opportunity task (the child was asked to identify ways in which other people try to convince the child to think or act in certain ways) and a persuasive argument task (the child was asked to respond to four hypothetical situations that had the child influence others).

According to Kline, the findings of her study “indicate that persuasive argument practices are associated with the kind of influence opportunities children perceive themselves to have in their everyday life” (1995, p. 271). Children who perceive themselves to have a number of collaborative influence opportunities – that is, opportunities in which they can engage in mutual influence – have more highly developed persuasive skills than children who do not perceive themselves to have such influence opportunities. Overall, the results suggest that interactions in which they are given the opportunity to influence others and to be influenced with arguments may provide the best context for children to develop their persuasive skills.

12.5 The Argumentative Turn in Cognitive Psychology

Within the field of the psychology of reasoning and decision-making, Hugo Mercier and Dan Sperber (2011) have recently proposed an “argumentative theory.”¹⁷ In some ways, the theory is related to “argumentation theory” as discussed in this volume, but since it is developed in the field of experimental psychology, it uses different concepts and yields a different type of results.

The argumentative theory proposed by Mercier and Sperber links the phenomenon of “reasoning” with that of “argumentation” by hypothesizing that the (main) function of reasoning is argumentative. The hypothesis was already suggested in earlier work by Sperber (2000, 2001) and is based on the detection of certain flaws in the view, dominant in the field of experimental psychology, that reasoning serves an “overall epistemic and/or practical function: it generates new beliefs, creates knowledge, and drives us towards better decisions” (Mercier 2011, p. 308). According to this view, the main function of reasoning is “to correct misguided intuitions, helping the reasoner reach better beliefs and make better decisions” (Mercier 2012, p. 259). The view propounded in the argumentative theory is that the main function of reasoning is “to argue: to produce arguments so we can convince others and to evaluate others’ arguments so as to be convinced only when appropriate” (Mercier 2012, pp. 259–260).

Putting forward this hypothesis on the function of reasoning enables Mercier and Sperber to (re)interpret many of the findings of tests conducted in experimental psychology. Whereas many scholars in psychology assume in accounting for their findings that the function of reasoning is corrective, in the sense that it helps people to correct their initial (and in some cases false) intuitions concerning the acceptability of opinions, Mercier and Sperber set out to account for the results of empirical tests starting from the assumption that the function of reasoning is argumentative.

One of the main advantages of this new perspective is that the mistakes or biases that are manifest in human reasoning processes, e.g., “confirmation bias,” can now be explained in a different and more satisfactory way:

Reasoning can lead to poor outcomes not because human beings are bad at it but because they systematically look for arguments to justify their beliefs or their actions. The argumentative theory, however, puts such well-known demonstrations of ‘irrationality’ in a novel perspective. Human reasoning is not a profoundly flawed general mechanism; it is a remarkably efficient specialized device adapted to a certain type of social and cognitive interaction at which it excels. (Mercier and Sperber 2011, p. 72)

Mercier and Sperber admit that a great many of the predictions regarding human reasoning can also be accounted for in different ways than by hypothesizing that

¹⁷ In a different area of psychology, a research tradition has already been established concentrating on the relationship between argumentation and education. See, for instance, Schwarz et al. (2000); Schwarz et al. (2003); Andriessen et al. (2003); Andriessen and Schwarz (2009); and Baker (2009).

reasoning has an argumentative function. According to them, however, making use of the argumentative theory of reasoning has the advantage of offering an “integrative perspective: It explains wide swaths of the psychological literature within a single, overarching framework” (2011, p. 72).

The argumentative theory of reasoning connects with the differentiation made within argumentation theory between the “production” of arguments, on the one hand, and the “evaluation” of arguments, on the other. The field of cognitive psychology provides empirical evidence that cognitive biases, interpreted as deviations from (mainly) logical norms regarding the quality of argumentation, occur in contexts where people produce arguments. These findings can be explained by assuming that the production of arguments “involves an intrinsic bias in favor of the opinions or decisions of the arguer whether they are sound or not” (Mercier and Sperber 2011, p. 72). With regard to the evaluation of arguments however, it appears to make a difference in what context people who are arguing are operating. When people are involved in a debate, for instance, it matters whether they put an interest in winning the debate or aim at finding the right answer or the best solution for a certain problem. There is an interesting parallel here with Aristotle’s distinction between “eristic” debates, in which the discussants aim at winning at the cost of reasonableness, and “dialectical” debates, in which the discussants will try not to hinder the “common business” of producing a good argument.¹⁸ In the case of an eristic type of debate, the other party’s arguments are mainly perceived as arguments that should be refuted, and therefore cognitive biases occur. But in the dialectical case of a problem-solving debate or “group reasoning” process, where people are cooperating in testing various hypotheses to find the truth or the solution, there is empirical evidence that they are actually quite good at evaluating the quality of arguments:

[C]ontrary to common bleak assessments of human reasoning abilities, people are quite capable able to do so in an unbiased way, provided that they have no axe to grind. In group reasoning experiments where participants share an interest in discovering the right answer, it has been shown that truth wins. (Mercier and Sperber 2011, p. 72, original italics)

As to this apparent epistemic asymmetry between the human reasoning capacities when people are involved in the production or in the evaluation of arguments, Mercier and Sperber conclude that people reason in a less biased way “when they are after the truth rather than trying to win a debate” (2011, p. 72). The argumentative theory further predicts that

when reasoning is used in the proper circumstances – among people who disagree but are ready to change their mind when confronted with good arguments – it can produce considerable epistemic benefits. More specifically, what makes a group discussion a propitious context for reasoning to yield epistemic improvements is the back and forth between the positions of producer and evaluator of argument. (Mercier 2012, p. 262)

¹⁸ See our explanation of Aristotle’s dialectic in Sect. 2.3.

Assuming that the function of reasoning is argumentative, in other words, may explain the phenomenon that in group discussions, where people make explicit what counts for and against a particular thesis, it will be easier for them to find out what is the truth regarding a particular problem.

As to the potentially fruitful collaboration between scholars from experimental psychology and argumentation theorists, Mercier (2012, p. 265) emphasizes that some of the differences that exist at present need to be overcome. So far, for example, experimental psychologists have taken the logical approach to the various types of argument as the starting point for their research, whereas argumentation theorists have also developed typologies of arguments from a dialectical and rhetorical perspective. As Mercier observed in an earlier article, “most tasks in this literature [on human reasoning] involve participants either evaluating the conclusion of an argument (in the logical sense) or trying to determine if a logically valid conclusion follows from some premises” (2011, p. 306), whereas the various models that have been developed in argumentation theory, e.g., the Toulmin model of argumentation (see Chap. 4, “Toulmin’s Model of Argumentation”) and the pragma-dialectical model of a critical discussion (see Chap. 10, “The Pragma-Dialectical Theory of Argumentation”), “may be very helpful heuristics in designing psychological theories” (2011, p. 307).¹⁹

As to further research, Mercier (2012, p. 266) proposes to take typologies regarding argument(ation) schemes and their associated critical questions developed in argumentation theory as a starting point for experimental studies regarding the evaluation of arguments. In this way, it might become clear which cognitive mechanisms are at play when people evaluate certain types of arguments as they have been classified from an argumentation theoretical point of view.

Some other psychologists have emphasized the connection between the theory of cognitive biases operative in the field of social and cognitive psychology and the theory of fallacies developed in logical and dialectical approaches in the field of argumentation theory. Summarizing the findings of a symposium organized during the European Conference on Cognitive Science in 2011, Hahn, Oaksford, Bonnefon, and Harris argue that “much of what has been identified as biased and fallacious in people’s reasoning may be the result of ignoring the appropriate argumentative context, the lack of an appropriate graded notion of argument strength and the lack of appropriate classificatory schemes for consequentialist arguments” (2011, p. 2).

In Hahn and Hornikx (2012), a number of studies have been collected that may count as a first step in connecting the research carried out in the field of cognitive psychology to theoretical notions developed in argumentation theory. According to the editors, the research field of “psychology of argumentation” is still in its infancy. Like Mercier (2011, p. 306), they point out that so far cognitive

¹⁹ For a response of argumentation scholars to Mercier and Sperber’s views of the relationship between the argumentative theory and argumentation theory, see Santibáñez Yañez (2012a) and the various contributions in Palczewski, Fritch, and Parrish (2012).

psychological research has mainly focused on the logical approach to argumentation, conceptualizing argumentation as a set of interrelated premises and a conclusion which can be described in a formal and structural way rather than as a social exchange of viewpoints aimed at increasing the acceptability of a standpoint within a specific context.

Overall, the psychology of argumentation is a promising new field of research, which is closely connected to argumentation theory. Given the methodological and conceptual differences between the two fields, scholars need to be working on the translation of crucial concepts from argumentation theory into cognitive psychological terms, on the reinterpretation of the findings of the experimental research that has been carried out, and on developing and conducting new experiments on the basis of Mercier and Sperber's replacement of the "corrective theory" of human reasoning by the "argumentative theory" of human reasoning.

12.6 Argumentation Studies in the Nordic Countries

In the Nordic countries, the study of argumentation has important roots in the semantic and practice-oriented dialectical approach to the clarification of discussions of the Norwegian philosopher Arne Naess, described in [Sect. 3.8](#). Other sources are the Finnish-Swedish logical tradition exemplified in Jaakko Hintikka's formal-dialectical systems described in [Sect. 6.3](#) and the modern Danish rhetorical tradition that started in the 1970s. In the 1980s and 1990s, the rise of pragma-dialectics and informal logic also stimulated the development of argumentation theory in this region. In fields such as linguistics, political science, law, education, and artificial intelligence, specific discipline-related problems were another impetus.

Rather than in fundamental theorizing, the growing interest in argumentation theory manifests itself since the 1990s in the Nordic countries primarily in textbooks on argumentation and critical thinking, studies about the nature of argumentation in a particular context, and a great number of MA theses. In higher education, argumentation is often taught in connection with philosophy of science, scientific reasoning, or reasoning skills pertaining to a specific research area or profession. More and more critical thinking has also found its way to university courses and textbooks. Argumentation and the rhetorical devices used in argumentative discourse are nowadays even taught in high school. In addition to education-related publications, there is a remarkable increase in publications reporting about qualitative research of argumentative discourse, for instance, with regard to biblical and other religious texts.

In describing the development of argumentation theory in the Nordic countries, we will start with Denmark, go on to Sweden and to Norway, and after discussing Scandinavia turn to Finland. In Denmark, the Danish philosopher Flemming Steen Nielsen contributed in 1997 from the perspective of philosophy and logic a historical monograph on Alfred Sidgwick's argumentation theory (Nielsen 1997). Vincent Fella Hendricks, Morten Elvang-Gøransson, and Stig Andur Pedersen (1995)

provided 2 years earlier an example of an approach to argumentation based on the theory of AI-logics. There is also some evidence of philosophical interest in studying the fallacies (e.g., Lippert-Rasmussen 2001, on begging the question). Most publications with a philosophical background however are practically oriented (e.g., Collin et al. 1987; Iversen 2010; Hendricks 2007).

In the 1980s, Lita Lundquist studied argumentation from a linguistic perspective, making use of text linguistics. Besides two monographs on text coherence (Lundquist 1980) and text analysis (Lundquist 1983), she published several articles in which she shows that the argumentative constraints that, according to Anscombe and Ducrot, certain words and expressions impose at the sentence level can be helpful in explaining argumentative relations at the macro-level of argumentative texts (Lundquist 1987). Anscombe and Ducrot's concept of "polyphony" can be used to establish a criterion for determining whether a particular discourse may be considered argumentative (Lundquist 1991). In the framework of conversation analysis, another Danish linguist, Annette Grinstead (1991), concentrated on differences between Danish and Spanish negotiation styles. Marie Lund Klugeff (2008), who exploits linguistic insights in pursuing a rhetorical approach, examined figurative speech in exchanges between an author and a rapper to determine the argumentative function of the use of rhetorical figures and style.

The rhetorical tradition in Scandinavia started in Denmark at the University of Copenhagen, where rhetoric was already a field of scholarship in the 1970s, thanks to Jørgen Fafner, who founded a productive research group. In the 1980s the Swedes caught up with the Danes and later also the Norwegians, especially after in 1997 the journal *Rhetorica Scandinavica* was launched and in 1999 the first Nordic Conference on Rhetoric had been held. From then on, a joint Scandinavian tradition developed, and the productivity increased considerably.²⁰

When Christian Kock took over Fafner's professorship in rhetoric in 1997, he continued the tradition of research on political argumentation and public debate that had been dominant at the University of Copenhagen since the 1980s. In *Retorik der flytter stemmer: Hvordan man overbeviser i offentlig debat* [Rhetoric that shifts votes: How to persuade in public debates], Kock presented in 1994, together with Charlotte Jørgensen and Lone Rørbach, an empirical study in which they examined 10 years of a Danish debate program on television (Jørgensen et al. 1994).²¹ Outside Copenhagen, rhetoric remained in Denmark, like in other countries, a subject studied in fields as disparate as Danish, literature, classical studies, and communication studies.

The rhetoricians from Copenhagen have continued their historical, theoretical, and practical research concerning deliberation and argumentation, public speaking

²⁰ Finnish scholars took not so much part in this development because, unlike the various Scandinavian languages, the Finnish language is not understandable to Danes, Swedes, and Norwegians.

²¹ See also Jørgensen (1995, 2011); Jørgensen, Kock, and Rørbach (1998); and Jørgensen and Kock (1999).

and debate in the first decade of the twenty-first century. Jørgensen, for instance, concentrated on normative rhetoric and argumentation (Jørgensen 2003). She compared the interpretations given by Gross and by Crosswhite to Perelman's universal audience (Jørgensen 2009), but also examined the relevance of intention in argumentation (Jørgensen 2007) and certain speech act phenomena in political argumentation (Jørgensen 2007). Kock (2003a, 2007c) further developed his outspoken views on rhetoric and argumentation. He clarified his claim that rhetorical argumentation is always about choice for action, instead of truth, and developed norms for "legitimate dissensus" (e.g., Kock 2007a, b, 2009a, b).²² Among the series of doctoral dissertations on rhetoric that were at the beginning of the twenty-first century completed at the Copenhagen Business School is Jonas Gabrielsen's study *Topik* [*Topos*], which describes the development of the notion of *topos* toward a persuasive activity (Gabrielsen 2008).²³

In Sweden, there is a strong logical tradition, but not much argumentation research has been carried out from a logical perspective. Early contributions relating to artificial intelligence were made by Richard Hirsch, who developed a heuristic model for the expression, evaluation, and revision of belief structures in artificial interactive argumentation (Hirsch 1987, 1989, 1991). In this model, argumentation occurs when a belief conflicts with, or is incompatible with, some other belief. This conflict initiates a search for a resolution or an elimination of the incompatibility. Hirsch illustrates his model by analyzing cases of belief revision in interactive argumentation. In 1995, he formulated desiderata for process and product representation in face-to-face interactive argumentation (Hirsch 1995).

A Swedish contribution to the study of argumentation by analogy is made by Juthe, who is preparing a doctoral dissertation at the University of Amsterdam. In Juthe (2005) he gives a characterization of this type of argumentation. Some arguments that are not presented as such should, in his view, nevertheless be interpreted as arguments by analogy. In Juthe (2009) he gives an account of parallel argument as a special type of argument by analogy in which an argument is refuted by presenting a flawed argument similar to the argument that is to be refuted. In general, the premises used in parallel argument are true or plausible, but the conclusion is evidently untrue or implausible. Juthe discusses the advantages and disadvantages of the use of parallel argument (p. 167).

Bertil Rolf and Charlotte Magnusson sketched in 2003 a software approach to the development of the art of argumentation (Rolf and Magnusson 2003).²⁴

²² For reasonable nonagreement, see also Pedersen (2011).

²³ Sine Just (2003) of the Copenhagen Business School approached the ongoing debate on the future of the European Union from a rhetorical perspective. Other publications of the same research group are Bengtsson (2011), Gabrielsen (2003), and Gabrielsen, Just, and Bengtsson (2011).

²⁴ Sweden has an important critical thinking tradition. Classics among the textbooks are P.-A. Walton (1970) and Andersson and Furberg (1974). Later introductions to argumentation and critical thinking are Hultén, Hultman and Eriksson (2009) and Björnsson, Kihlbom and Ullholm (2009).

A theoretical contribution from a philosophical and logical perspective concentrating on authority-based argumentative strategies is the doctoral dissertation that Taeda Tomic defended in 2002 at the University of Uppsala. Tomic discusses three models for the evaluation of such strategies (Tomic 2002).²⁵ In 2007, she examined the relationship between communicative freedom and the evaluation of argumentative strategies (Tomic 2007a).²⁶ Another philosophical doctoral dissertation relevant to argumentation theory, this time focusing on reasoning by analogy in law, was in 2007 defended in Lund by David Reidhav (2007).

There are also various Swedish studies of argumentation from a linguistic perspective, making use of pragmatic insights. Viveka Adelswärd brought conversation analysis to bear in analyzing argumentation in institutionalized contexts such as job interviews (Adelswärd 1987, 1988), interviews with conscientious objectors (Adelswärd 1991), and discourse in the courtroom (Adelswärd et al. 1988). Åsa Brumark (2007) provides more insight in argumentation at the Swedish dinner table. Mihai Frumescu (2007) examines linguistic and argumentative typologies of concessions. Lars Melin devoted in 2003 a monograph to manipulation by means of language (Melin 2003). A linguistic study about decision-making related to argumentation theory is Gunnarsson (2006).

In *What else can I tell you?* Cornelia Ilie (1994) aimed to provide a pragmatic framework for dealing with rhetorical questions as they occur in everyday English. By giving a systematic interpretation and evaluation of their argumentative functions, she attempts to account for the argumentativeness of rhetorical questions in political speeches. From her analysis, she concludes that in such speeches rhetorical questions fulfill three major functions: (1) opinion manipulation by defending the politician's position or attacking the position of their opponent; (2) facilitation of the storage of the politician's message in the audience's memory; and (3) creation or maintenance (by irony or sarcasm) of a sense of togetherness with the audience and induction or reinforcement of negative attitudes toward political opponents. In Ilie (1995), she concentrates on rhetorical questions in the courtroom,²⁷ but she also continues her research regarding political discourse in later publications. In these publications she often deals with specific argumentative phenomena – such as refutation of arguments through the use of definitions (Ilie 2007).

The study of rhetoric grew in Sweden out the study of literature, with Kurt Johannessson as the founding father. Johannessson, the first professor of rhetoric in Uppsala in modern times, published in 1990 a textbook that is still widely used: *Retorik – eller konsten att övertyga* [Rhetoric – or the art of persuasion]

²⁵ There are also introductions to critical thinking and argumentation, such as Hultén, Pernilla, Hultman, and Eriksson (2009) and Björnsson, Kihlborn and Ullholm (2009).

²⁶ See also Tomic (2007b) and Jovičić (2003a, b), contributions which Tomic published under a different name.

²⁷ An earlier study in Swedish dealing specifically with the analysis of legal argumentation is Evers (1970).

(Johannesson 1990). At the beginning of the twenty-first century, with the appointments of Brigitte Mral and Lennart Hellspång at the universities of Örebro and Södertörn, other Swedish universities also started a line of research in rhetoric.²⁸ Among Mral's publications is *Women's rhetoric* (Mral et al. 2009), a collection of essays about argumentative strategies used by women in public life. Among Hellspång's publications relevant to argumentation theory is "Arguing from clichés," an article co-authored by Cornelia Ilie (Ilie and Hellspång 1999).

Among the representatives of a younger generation approaching argumentation from a rhetorical perspective is Marie Gelang, who joined Jens E. Kjeldsen – a Danish scholar working in Norway and later also in Sweden – in studying nonverbal communication as argumentation (Gelang and Kjeldsen 2011).²⁹ Other rhetorical contributions to argumentation theory have been made in the doctoral dissertations of Barbro Wallgren-Hemlin (1997), *Att övertyga från predikstolen* [Persuading from the pulpit]; Anders Eriksson (1998), *Traditions of rhetorical proof. Pauline argumentation in 1 Corinthians*; Anders Sigrell (1999), *At övertyga mellan raderna* [To convince between the lines]³⁰; Charlotte Hommerberg (2011), *Persuasiveness in the discourse of wine*; and Maria Wolrath Söderberg (2012), *Topos som meningsskapare: Retorikens topiska perspektiv på tänkande och lärande genom argumentation* [*Topoi as meaning makers: Thinking and learning through argumentation – a rhetorical perspective*]. Sigrell also studied the normativity of the progymnasmata exercises (Sigrell 2007) and connected these exercises with pragma-dialectics and pedagogy (Sigrell 2003).

Although in Norway the study of argumentation has not in the first place developed from a philosophical or logical perspective, the education-oriented approach to argumentation of Tone Kvernbekk, one of the most prominent Norwegian argumentation theorists, is close to informal logic (e.g., Kvernbekk 2003a, b, 2007a, b, 2009, 2011). Also important is the monograph on rational argumentation in which Dagfinn Føllesdal, Lars Walloe, and Jon Elster (1986), who connect argumentation theory with philosophy of science, analyze and compare the types of arguments most common in the social sciences, physics, and the humanities. From a linguistic perspective, Margareth Sandvik (1995) gives her view on the methodological implications of integrating pragma-dialectics and conversation analysis in the study of interactive argumentation. She also focuses on criteria for winning and losing a political debate (Sandvik 1999).³¹

As Kjeldsen (1999b) makes clear in his overview of the history of rhetoric in Norway, compared with Denmark and Sweden, this country was a late starter in this field. Due to the activities of Georg Johannesen, who became in 1996 the first Norwegian professor of rhetoric, scholarship in rhetoric increased from the 1980s onwards. In the 1990s, media scholar Jostein Gripsrud initiated in Bergen a

²⁸ Later Anders Sigrell became professor of rhetoric in Lund and Mats Rosengren at Södertörn.

²⁹ Another publication about visual rhetoric is Engdahl, Gelang, and O'Brien (2011).

³⁰ Sigrell (1995) concentrates his research on implicitness in argumentative discourse.

³¹ A Norwegian study of legal argumentation from a rhetorical perspective is Graver (2010).

multidisciplinary project that stimulated the general acceptance of rhetoric considerably, resulting in the appointment of new professors and the institutionalization of rhetoric programs in the universities of Oslo and Bergen. When at the end of the twentieth century the journal *Rhetorica Scandinavica* was launched and the tri-annual Nordic conferences got organized, the emancipation process was completed, and Norwegian rhetoric was fully incorporated in the broader Scandinavian context. As a consequence of the emphasis laid on research of *sakprosa* [nonfictional, factual prose], in the first decade of the twenty-first century, a remarkable increase of productivity can be noticed.³²

Although in Norway the link between the study of rhetoric and the study of argumentation is not always so strong, argumentation theory has certainly benefitted from the growth in rhetoric.³³ In the 1990s, Jostein Gripsrud initiated at the University of Bergen a multidisciplinary research project that started – stimulated by the media scholar Peter Larsen – a firm research tradition in visual rhetoric. In 2002, Kjeldsen defended in Bergen a doctoral dissertation on visual rhetoric that connects clearly with argumentation theory (Kjeldsen 2002).³⁴ He made this connection even more explicit in essays about visual argumentation in political advertising (Kjeldsen 2007) and visual tropes and figures as argumentation (Kjeldsen 2011b).³⁵ Both in Bergen and in Oslo rhetoric, persuasion and argumentation have also been studied from a legal perspective. One of the results is the monograph *Språk og Argumentasjon* [Language and argumentation] by Eivind Kolflaath (2004).³⁶

In Finland, the study of argumentation in philosophy was stimulated both by a keen interest in philosophical methodology and by an awareness of the developments in argumentation theory that had taken place elsewhere. This resulted in the publication of theoretical studies as well as textbooks. The theoretical studies reflect, on the one hand, the engagement of Finnish philosophers with Aristotle and, on the other hand, their engagement in the advancement of modern formal logic. The former is, for instance, illustrated in the way in which Marja-Liisa Kakkuri-Knuuttila (1993) presents Aristotle's topics as a general method for reasonable argumentation,³⁷ and the latter in the contributions that Hintikka, currently the most prominent Finnish logician, has made to the study of the fallacies

³² A noteworthy Norwegian study of argumentation strategies in science that is part of the research of “sakprosa” is Breivega (2003).

³³ See Kjeldsen and Grue (2011). See, for an example of such research, Sandvik (2007) on the rhetoric of emotions in political argumentation.

³⁴ See also Kjeldsen (1999a).

³⁵ See also Kjeldsen (2011a) and Gelang and Kjeldsen (2011). With Johanson, Kjeldsen published also a history of Norwegian political speech-making between 1814 and 2005 (Johanson and Kjeldsen 2005).

³⁶ See also Skouen (2009).

³⁷ Other monographs showing the influence of historical philosophers on current Finnish argumentation theory are Tuominen (2001) with regard to antiquity and Yrjönsuuri (1995, 2001) with regard to medieval logic and dialogue games.

(e.g., Hintikka 1989).³⁸ Widely used textbooks dealing with argumentation and critical thinking are published from both angles (e.g., Kakkuri-Knuuttila 1998, and Hintikka and Bachman 1991, respectively).³⁹

The textbook *Argumentti ja kritiikki: Lukemisen, keskustelun ja vakuuttamisen taidot* [Argument and critique: The skills of reading, discussing and persuading], edited by Kakkuri-Knuuttila, is in fact the most influential general contribution to Finnish argumentation theory. It was first published in 1998 and had in 2007 its 7th edition. *Argumentti ja kritiikki* has chapters on interpretation, the question–answer method, argument analysis, formal theory, fallacies, debate, rhetoric (including rhetoric in economic policy-making), argument in science, concept formation, the structure of research, and argumentation and philosophy of science.

The study of argumentation has been practiced at the University of Turku since the early 1990s, when Georg Brutian from Armenia visited Finland to take part in one of the conferences organized by Juhani Pietarinen (see Pietarinen 1992). Juho Ritola's epistemological approach to the fallacies is an offshoot of this tradition.⁴⁰ Ritola's (2004) doctoral dissertation, *Begging the question: A study of a fallacy*, is a sequel to his earlier essays on circular arguments (Ritola 1999) and question-begging (Ritola 2003, 2007, 2009). In 2009, a conference on Finnish argumentation theory organized by Ritola resulted in the publication of *Tutkimuksia argumentaatiosta* [Studies on argumentation] (Ritola 2012). This volume contains essays on the general norms of argumentation, the nature and teaching of critical thinking, and empirical studies of the use of argumentation in learning processes.

An outstanding example of an approach to argumentation starting from the problems of a specific discipline is given by Aulis Aarnio, who studied the problem of legal justification in the philosophical context of rationality and reasonableness (Aarnio 1987).⁴¹ Other examples relate to the fields of linguistics and education. In the 1980s, Sonja Tirkkonen-Condit examined argumentation from a cross-linguistic perspective. She discusses in Tirkkonen-Condit (1985) problems involved in translating argumentative texts from English into Finnish. In Tirkkonen-Condit (1987) she compared the location of the main thesis in Finnish newspaper editorials with its location in British newspapers. Tiina Renko (1995) discussed problems of interpretation and identification in dealing with argument as a theoretical notion.

At the Faculty of Education of the University of Jyväskylä, Leena Laurinen and Miika Marttunen have studied argumentation empirically, concentrating in particular on argumentation in computer environments. In 1995, Marttunen wrote about practicing argumentation through computer conferencing (Marttunen 1995).

³⁸ See also Paavola (2006) on abductive argumentation.

³⁹ Another well-recognized textbook is Siitonen and Halonen (1997). Critical thinking is approached from the perspective of debate in Kurki and Tomperi (2011).

⁴⁰ From Jyväskylä, Pajunen (2011) contributed to the study of epistemic concepts, such as “acceptance,” in argumentation theory.

⁴¹ For a Finnish study on juridical argumentation, see also Sajama (2012), who prepares a textbook on legal argumentation.

His doctoral dissertation, completed in 1997, is *Studying argumentation in higher education by electronic mail* (Marttunen 1997). Together with Laurinen he discussed in 1999 learning argumentation in face-to-face communication and e-mail environments (Marttunen and Laurinen 1999). The two of them reported in 2003, together with Marta Hunya and Lia Litosseliti, on argumentative skills of secondary school students in Finland, Hungary, and the United Kingdom (Marttunen et al. 2003). In the same year, they examined with Timo Salminen grounding and counter-argumentation during face-to-face communication and synchronous network debates in secondary school (Salminen et al. 2003). A related case study about the quality of argumentation in master's theses was in 2007 at the University of Helsinki conducted by Marita Seppänen (Seppänen 2007). The latest contributions by Marttunen and Laurinen to the study of argumentation in educational context have focused on collaborative learning through construction of joint argumentative diagrams in secondary schools (Marttunen and Laurinen 2007; Salminen et al. 2010), quality of argumentation in secondary school students' structured and unstructured chat discussions (Salminen et al. 2012), and promoting social work students' argumentative problem-solving skills through online and face-to-face role-play simulations (Vapalahti et al. 2013).

Although in Finland rhetorical research is rather thin on the ground, according to Mika Hietanen (2007b), some relevant research has taken place in the humanities, theology, and the social sciences, in particular in political analysis.⁴² A case in point in theology is Hietanen's own doctoral dissertation, defended in 2005 at Åbo Akademi University and published as *Paul's Argumentation in Galatians: A Pragma-dialectical Analysis of Galatians* (Hietanen 2007a).⁴³ Hietanen analyzes Paul's argumentation with the help of the extended pragma-dialectical theory, thus including rhetoric in his perspective.⁴⁴ A popular book on classical rhetoric is Juhana Torkki's *Puhevalta: Kuinka kuulijat vakuutetaan* [The power of speech: How the listener is convinced] (Torkki 2006).

Like in other countries, in Finland the rhetorical study of argumentation is more and more concentrated in departments of speech communication, which are in this country strongly influenced by the German *Sprechkunde* [Art of speaking] tradition but also by the public speaking tradition of American speech communication. The biggest Finnish communication department, housed at the University of Jyväskylä, organized already in 1986 an international conference on text, interpretation, and argumentation that resulted in a book publication (Kusch and Schröder 1989). Currently, speech communication can also be studied at the universities of

⁴² A case study of a historical political debate is reported in Rudanko (2009).

⁴³ Another Finnish theologian that deserves to be mentioned is Lauri Thurén, currently professor at the University of Joensuu, who published in 1995 the first fully fledged application of Toulmin's model to a book of the Bible (Thurén 1995). Another Nordic application of Toulmin's model in theology is Hietanen (2002).

⁴⁴ See also Hietanen (2003, 2010, 2011a). In Hietanen (2007c) the gospel of Matthew is analyzed as an argument. See also Hietanen (2011b).

Tampere, Helsinki, Turku, and Vaasa, often in connection with media studies, but the emphasis is different in each program. Although Turku has a new rhetoric tradition and Tampere has expertise on courtroom rhetoric and parliamentary debate,⁴⁵ argumentation research is nowhere really prominent.⁴⁶

12.7 Argumentation Studies in German-Speaking Areas

Just after the Second World War rhetoric and argumentation studies were mistrusted in the German-speaking countries because the Nazis had so successfully made use of rhetorical propaganda (Kienpointner 1991, p.129). Since the 1970s however, there is a growing amount of research on argumentation. The approaches to argumentation that have since then been developed are predominantly linguistic, philosophical, or rhetorical in nature.

Linguistic studies of argumentation, inspired by speech act theory, conversation analysis, and discourse analysis, started in Germany in the early 1970s with the study of argumentative dialogues and speech acts such as “to argue,” “to explain,” and “to prove.”⁴⁷ They are usually based on a corpus of written or spoken argumentative texts and aim for empirical description.

A method for describing argumentative discourse based on pragmatic stylistics was developed by Albert Herbig (1992), who tested his method empirically. Barbara Sandig and Ulrich Püschel (1992) edited a volume on styles of argumentation. The theoretical framework of the studies concerned is constituted by speech act theory and conversation analysis, “text-internal” stylistics (propositional, prosodic, and illocutionary aspects) and “text-external” stylistics (emotional, competitive, cooperative, gender-specific, political, intercultural dimensions). Jochen Rehbein (1995) favors a linguistic approach to argumentation in which pragmatic, historical, and cognitive insights are implemented. He analyzes the use of complex referential expressions in argumentative discourse. Walter Kindt (1988, 1992a, b) combines the formal analysis of argumentation in natural language with insights from Aristotelian topics. Linguistic studies influenced by conversation analysis tend to concentrate on conflict management in dialogue and conflict-solving strategies. Psychological and sociological approaches are then often combined with research techniques and concepts from conversation analysis. As is shown

⁴⁵ At the University of Tampere, within social sciences, Kari Palonen has specialized in parliamentary debate and, within speech communication, Pekka Isotalus in political debate in the media (see Wilkins and Isotalus 2009).

⁴⁶ Occasionally, *Prologi*, the journal published by the Finnish National Association for Speech Communication (Prologos), includes articles relating to argumentation.

⁴⁷ Öhlschläger (1979) discusses “to argue,” Strecker (1976) “to prove,” and Klein (1987) a group of speech acts including “to confirm,” “to explain,” “to infer,” and “to justify.” Apeltauer (1978) provides a survey of sequences of speech acts, moves, and strategies in debate and discussions (see also Zillig 1982).

by Johannes Schwitalla (1987), argumentation not only is a means to solve conflicts but also serves to maintain consensus and confirm group identity.⁴⁸

A speech communication scholar dealing with argumentative discourse is Norbert Gutenberg, who has contributed to the processes of listening, understanding, and judgment (1984), but also to rhetoric, dialectic, and truth management, and the study of the relation between dialectic and rhetoric (1987). Ines Bose and Gutenberg (2003) show that analyzing argumentation in spoken language requires taking account of prosody.

Kienpointner (1992) presents a typology of argument schemes in order to give a complete description of the different types of argumentation that are used in the German language community. He bases his typology on the distinction between different types of warrants (p. 43). Kienpointner's elaborate typology is in fact an eclectic compilation of classical and modern classifications.⁴⁹

Kienpointner distinguishes between the following main classes of argument schemes: (1) *schlussregelbenützende Argumentationsschemata* [warrant-establishing argument schemes], (2) *schlussregeletablierende Argumentationsschemata* [warrant-using argument schemes], and (3) *Schemata die weder Schlussregeln einfach benützen noch etablieren* [argument schemes that neither use nor establish warrants] (1992, p. 243).⁵⁰ The first of these three main classes consists of argument schemes in which the premise is connected to the conclusion by way of a warrant that is assumed to be already acceptable. In this sense, the warrant is "used." This main class is subdivided into four subclasses: (1) "schemes of classification," including argument schemes based on "definition," "genus-species argumentation," and "part-whole argumentation"; (2) "schemes based on a comparison"; (3) "schemes of contradistinction based on contrary oppositions, contradictions, incompatibilities, and converse oppositions"; and (4) "causal argument schemes," including cause–effect argumentation, argumentation based on motives, and means–end argumentation. The second main class consists of argument schemes in which a warrant-like statement expressed in the conclusion is justified by means of inductive argumentation: "the warrant is the conclusion and is not a premise in the argumentation" (Kienpointner 1992, p. 243). This main class comprises only one argumentation type: "inductive argumentation in the restricted sense."

⁴⁸ See also Schank and Schwitalla (1987), Gruber (1996), and Deppermann and Hartung (2003). See Lüttich (2007) for an analysis of argumentation in televised debates.

⁴⁹ There are only few studies dealing with the overall structure of argumentative texts. In these studies, the structure of the text is made visible with the help of complex diagrams which show the interrelation of the arguments. See Deimer (1975), Grewendorf (1975, 1980), Frixen (1987), and Kopperschmidt (1989a).

⁵⁰ The distinction between "schlussregeletablierende" and "schlussregelbenützende" argument schemes corresponds with the Toulminian distinction between "warrant-using" and "warrant-establishing" arguments (see Chap. 4, "Toulmin's Model of Argumentation" of this volume). There is also a correspondence between this distinction and Perelman and Olbrechts-Tyteca's distinction between argumentation based on the structure of reality and argumentation establishing the structure of reality (see Chap. 5, "The New Rhetoric" of this volume).

The third main class consists of argument schemes that cannot be classified in the first or the second main class. It comprises “illustrative argumentation,” “argumentation based on analogy,” and “argumentation based on authority.”⁵¹

In German philosophical approaches to argumentation, two traditions have been most influential: the dialogue logic of the Erlangen School and Jürgen Habermas’s theory of communicative rationality. The influence of the Erlangen School is manifested in the philosophical work of the *Hamburger Arbeitsgruppe Argumentationstheorie* [Hamburg research group on argumentation theory], directed by Harald Wohlrapp of the University of Hamburg.⁵² Wohlrapp (1977) has modified the views of the Erlangen School by introducing insights from Kuhn and Feyerabend, from action theory, from Peirce, and from Hegelian dialectics.⁵³ In his view, argumentation is not to be seen as an instrument for conflict resolution but as a way of theory formation. To bridge the gap between objective truth and subjective acceptability, Wohlrapp (1995) developed a concept of *Gültigkeit* [validity], a notion applying to theses rather than to reasoning patterns (Wohlrapp 1977, pp. 289–291).

In *Der Begriff des Arguments* [The concept of argument], Wohlrapp (2009) presents his ideas for a new philosophical foundation of argumentation theory, a basis which is in his view strongly lacking in most modern work in the field.⁵⁴ Given the deficient *status quo* of modern argumentation theory, Wohlrapp claims that the field needs a philosophical foundation centered around the validity of argumentation. He promises a new concept of argumentation that is dialectic, pragmatic, and reflexive; captures innovation and differences in perspective; and provides the core of a concept of *thetical reason* (p. 45). In this connection Wohlrapp distinguishes between *epistemical* theories (theories that are reliably true) and *thetical* theories (theories that are useful for the time being but might be in need of revision).

In Wohlrapp’s view, validity can be of two kinds, depending on the type of theory: “epistemical,” i.e., providing an approved orientation, or “thetical,” i.e., providing a *New Orientation* (Wohlrapp’s capitalization). A thesis is *gültig* [valid] if, after examining the arguments for and against it in a dialogue, there is no objection left (p. 349). In other words, a thesis is valid if the proof is free from objections; otherwise it is invalid (p. 354). Wohlrapp maintains that this kind of validity is independent of audience assent (p. 344). Not every dissent or *Streit* [dispute] may give cause to argumentation; argumentation is to be reserved for situations in which a fundamental orientation is to be tested and improved (2009, p. 144).

According to Wohlrapp, in argumentation three *Grundoperationen* [basic operations] can be distinguished: (1) claiming or affirming, (2) justifying or

⁵¹ See also Kienpointner (1993) and (1996).

⁵² See Wohlrapp (1987, 1990, 1991), Lüken (1991, 1992, 1995), Mengel (1991, 1995), and Volquardsen (1995).

⁵³ See Wohlrapp (1987, 1991, 2009).

⁵⁴ For a review of Wohlrapp’s *Der Begriff des Arguments*, see Hoppmann (2012).

proving, and (3) criticizing. *Argumentation* is, in his view, “that which is produced between the affirmation of a thesis and the judgment of the validity of a conclusion” (2009, p. 190). All substantial argumentative acts can be subsumed under *claiming*, *proving*, or *criticizing*. In addition to these basic operations, Wohlrapp describes *Rahmenstrukturen* [frames]. The concept of “frame” addresses some of the problems that arise from the subjectivity of the arguers. In Wohlrapp’s terminology, framing is not an elocutionary technique, but rather the idea of seeing “A as B,” “A in the light of B,” or “A for the purpose of B.” His example is the “car” that can be seen by different arguers as a mode of transportation, a location of privacy in the public sphere, or as an object of prestige (p. 239).

One of Wohlrapp’s students, Geert-Lüke Lüken (1991, 1992, 1995) proposed an argumentative solution to the incommensurability problem caused by the radical differences between theories, paradigms, and world views. He argues that the problem, though serious, does not present a threat to the rationality of scientific argumentation. Such a threat arises only if rationality is exclusively connected with a particular system of rules. Proponents of incommensurable theories can never reach consensus in a *Begründungsspiel* [rule-guided reasoning game]. Lüken (1991) therefore recommends an “anticipatory practice,” consisting in a type of “mutual field research.” The participants in the discussion should attempt to learn as much as possible about each other’s forms of life, mutually assuming the roles of teacher and student and taking note of even seemingly unimportant details, without imposing their own cognitive categories and standards on others (pp. 248–249).

Lüken (1992) intends to demonstrate that, in principle, it is possible to overcome conflicts between incommensurable positions with the help of rational argumentation. Firstly, following Feyerabend, he suggests a kind of “free exchange” (p. 294). This is a learning situation similar to anthropological field research. Secondly, taking up suggestions of the Erlangen school, Lüken suggests techniques of teaching a new language (1992, p. 315). Mutual comprehensibility cannot be presupposed in cases of incommensurable systems of orientation. Therefore, the participants have to teach each other how to use and interpret the expressions of their language.

Peter Mengel (1995), another doctoral student of Wohlrapp, tries to shed light on the interrelationship between analogy and argument: How can analogy argumentation claim validity? One of Mengel’s starting points is that there exists a tension between the practical relevance of the research of analogy argumentation, on the one hand, and the actual attention that argumentation theory pays to this phenomenon, on the other hand. He observes that analogy argumentation is indeed used quite often, not only in everyday argumentation but also, for instance, in philosophical discourse. Theoreticians, however, tend to approach this analogy argumentation with a certain degree of disdain. Mengel raises the question of whether this theoretical disdain is justified, in particular in view of the practical relevance of analogy argumentation. He opts for a perspective that he thinks can offer a proper account of analogy argumentation: a version of Wohlrapp’s argumentation theory. In this theory, “Geltungsrelevanz” [validity relevance] is directly related to (real or fictitious) objections of parties in a discussion. An analogy is valid if it can withstand these objections.

Another German philosopher who has developed a systematic perspective on argumentation is Christoph Lumer (see also Sect. 7.6 of this volume). In Lumer's (1990, 1991, 2005) epistemological approach, the rationality of argumentation is not solely based on the norms applying to formal deductive reasoning, but also on the norms described in probability theory and decision-making theory.⁵⁵ Lumer formulates validity conditions, soundness conditions, and adequacy conditions for the evaluation of different types of everyday argument. Among the argument types he discusses are generalizations and interpretative, epistemological, and practical arguments.

A tradition that has been of great influence in the German-speaking philosophical world is inspired by Habermas's approach to *communicative rationality* (Habermas 1971, 1973, 1981, 1991). Habermas's work belongs to a stream of philosophy often referred to as *Diskurstheorie* [theory of discourse]. It takes a stance against all kinds of relativism. The main sources of this stream, originating in the neo-Marxist "Frankfurter Schule," are Habermas and Karl-Otto Apel.

In the normative model of argumentation represented by the "ideal speech situation" developed by Habermas, the conditions are specified which must be fulfilled for a discussion to result in a *Begründeter Konsens* [well-founded rational consensus]. Habermas distinguishes three levels of communicative rationality, each of them having its own critical standards. At the logical level, argumentation is evaluated as a "product" by applying logical and semantic rules: Speakers, for instance, may not contradict themselves and their use of linguistic expressions must be consistent. At the dialectical level, argumentation is evaluated as a "procedure." Pragmatic rules then applied are, for instance, that speakers should be sincere and prepared to defend themselves against attacks. At the rhetorical level, argumentation is evaluated as a communicative "process." The conditions that have to be fulfilled are, for example, that free participation in the discussion is not limited by external factors. In practice, the ideal speech situation will never be completely realized, but the basic assumptions of ideal communicative action and argumentation are implicitly anticipated.⁵⁶ According to Habermas, they can therefore serve as a critical standard for judging everyday argumentation.⁵⁷

⁵⁵ Lumer (2011) aims at developing general criteria of argumentative validity and adequacy for probabilistic arguments on the basis of, and from the viewpoint of, an epistemological approach to argumentation. These general criteria should provide the theoretical basis for, and a generalization of, the epistemological criteria for several special types of probabilistic arguments. The most obvious theoretical starting point of this epistemological approach to argumentation is Bayesian epistemology. However, since Bayesian epistemology in its present form is found to be defective in several respects (unresolved problem of priors, unfeasibly excessive coherence and conditionalization requirements, few exact degrees of belief, poor practical justification of Bayesianism, etc.), practical solutions need to be developed which are apt for argumentative use.

⁵⁶ Apel (1988) regards the argumentative situation as the "transcendental-pragmatic condition" of all rational speech activity.

⁵⁷ Further elaborations of Habermas's theory of communicative rationality, the dialogue theory of the Erlangen School, and their practical implications are given in Berk (1979) and Gerhardus, Kledzig, and Reitzig (1975).

A prominent theoretical approach to argumentation in Germany that is influenced by Habermas is Josef Kopperschmidt's rhetorical approach to argumentation. Kopperschmidt studied rhetoric in Tübingen and he is an advocate of the rehabilitation of classical rhetoric. Using insights from rhetoric, but also from speech act theory, text linguistics, and Habermas's theory, he has developed a normative theory of argumentation (Kopperschmidt 1976a, 1978, 1980, 1987, 1989a).⁵⁸ In his publications on argumentation, Kopperschmidt attempts to bridge the gap between abstract theory and argumentation analysis and practice. He views rhetoric as a sub-theory of the theory of communicative competence. An important aim of the study of rhetoric is, in his opinion, to develop rules for a felicitous and successful performance of persuasive speech acts that can be used to resolve controversies concerning practical matters and norms for action. An important task for argumentation theorists is, according to Kopperschmidt (1995), to supply means for meeting the need for consensus, especially in politics.

Central figures in German rhetoric are Gert Üding,⁵⁹ and, when it comes to rhetoric and argumentation, Manfred Kraus. Üding and his former colleague Walter Jens developed at the University of Tübingen a famous and productive center for the study on rhetoric – in fact the only rhetoric department in Germany. In 1984 Jens started the comprehensive project *Historisches Wörterbuch der Rhetorik* [Historical dictionary of rhetoric], which was finished by Üding (Üding and Jens 1992, 1994). Manfred Kraus (2006) contributed to argumentation theory by applying the Toulmin model (see Chap. 4, “Toulmin's Model of Argumentation” of this volume) to complement Cicero's classical formal approach. Kraus (2007) argues that in Roman rhetoric, *contrarium* was considered either as a figure of speech or as an argument. *Contrarium* is a way of juxtaposing two opposing statements, using one statement to prove the other. According to Cicero, it is based on a third Stoic indemonstrable syllogism: $\neg (p \wedge q)$; $(p \rightarrow \neg q)$. The persuasiveness of this type of argument, however, vitally depends on the validity of the alleged “incompatibility” forming its major premise. This appears to be the argument's weak point, as the “incompatibilities” never really hold. This is why in practice such arguments are most often phrased as rhetorical questions. The persuasive force of these rhetorical questions is enhanced by certain strategic maneuverings and fallacies.

Kraus (2012) uses the sophistic concept of “anti-logical reasoning,” as well as certain approaches of rhetoric and discourse analysis, to establish the logic and rhetoric of polemic arguments within the framework of critical discussion (in the

⁵⁸ Kopperschmidt also published a substantial number of articles on the history of rhetoric and the analysis and evaluation of political speeches (1975, 1976b, 1977, 1989b, 1990). He edited books on rhetoric as a theory of the production of texts and the influences of rhetoric in other disciplines (1990, 1991) and edited a volume on Perelman and Olbrechts-Tyteca's new rhetoric (Kopperschmidt 2006).

⁵⁹ Together with Jens, Üding edited *Rhetorik, ein internationales Jahrbuch* [International rhetorical yearbook]. Jens made a series of contributions to the study of political rhetoric and the history of rhetoric from antiquity to the twentieth century. For the history of rhetoric in Germany from the sixteenth to the twentieth century, see Schanze (1974).

pragma-dialectical sense). All argumentation starts from dissent, but needs common ground to build on, which is usually provided by cognitive or cultural environments shared by the arguers. In cases of radical cognitive or cultural diversity, there is little common ground, so that only polemic argument will be possible. Polemic argument characterizes in fact much of our present argument culture, because in present pluralistic societies various groups have divergent cultural backgrounds and different argument cultures.

Lars Leeten (2011) examines the central role of rhetoric in moral discourse. In practical matters it is not enough to justify practical beliefs as “true”: The motivational dimension cannot be ignored. Rhetorical methods are not designed to examine theoretical truths but are designed for the purpose of practical decision-making. This is why rhetoric and ethics have always been closely related. Leeten discusses how *expressive speech* can have a place in rational moral argumentation. The important question then is how such speech can be more than just emotional talk and be part of moral *argumentation*.

Using a rather broad concept of argumentation, Kati Hannken-Illjes analyzes argumentative discourse in criminal cases. In Hannken-Illjes (2006) she explores how, in the legal realm, different argumentation fields interact, the juridical field being just one of them. She lays out an approach of studying argumentation in the legal realm in the framework of an ethnographic methodology by identifying the *topical rules* the participants in criminal trials adhere to. Suggesting the notion of “field-dependence” as a starting point for the analysis of legal argumentation, she provides examples from different fields of argumentation interacting in criminal proceedings. The examination of what counts as a good reason and how arguments are employed, negotiated, and evaluated in criminal proceedings sheds light on the practice of constructing facts and arriving at decisions in court. Furthermore, this examination points at the constitution of legal rationality and how it is produced in criminal trials. Hannken-Illjes shows that in criminal proceedings rationality is interactively achieved by negotiating different standards of validity.

Hannken-Illjes (2007) wonders what the relation between narration and argumentation amounts to when it comes to the production of facts in criminal proceedings. In Hannken-Illjes (2011), Prior’s method of “ethnography of argumentation” is used to analyze instances of “argumentative blanks” in German criminal cases. By “argumentative blank” Hannken-Illjes means the situation in which an arguer does not provide reasons, in spite of the fact that the procedure allowed for them.

12.8 Argumentation Studies in Dutch-Speaking Areas

In the Netherlands, argumentation theory is a strongly developed field, and to a lesser extent this also goes for the Dutch-speaking part of Belgium. Several of the main approaches to argumentation are well represented at universities throughout the region: formal dialectics at the University of Groningen, pragma-dialectics and rhetoric at the University of Amsterdam and Leiden University, persuasion research at the Radboud University Nijmegen, and rhetoric at the Lessius University College in Antwerp.

Most argumentation scholars in the Dutch-speaking areas of the world have developed their specific approaches to the subject within the field of “speech communication,” but argumentation theory is also represented in philosophy. In other fields, such as legal studies, there are also scholars who make use of argumentation theory to find solutions for problems of their fields. In the research three main strands can be distinguished. The first and dominant one is the dialectical approach, represented most prominently by the *pragma-dialectical approach* and in philosophy also by *formal dialectics*. Since we already discussed pragma-dialectics in Chap. 10, “The Pragma-Dialectical Theory of Argumentation” and formal dialectics in Sects. 6.5 and 6.9 of this volume, we leave them out of consideration in this section.

A second type of approach to argumentation developed in Dutch speech communication is *procedurism*. This approach takes its inspiration, next to the logical and dialectical sources, from the modern rhetorical tradition and American debate theory. Below, we will discuss the work of Peter Jan Schellens, Gerard Verhoeven, and Paul van den Hoven, who are representatives of this approach.

The third type of approach is – again next to the logical and dialectical sources (in particular pragma-dialectics) – inspired in the first place by classical rhetoric. Below, we will discuss the work of Antoine Braet, who is the main representative of this approach.

Among the first Dutch scholars emphasizing the importance of argumentation in speech communication were Willem Drop and Jan de Vries, who introduced the Toulmin model and its use in the analysis and evaluation of argumentative discourse in their influential textbook *Taalbeheersing* [Speech communication] (Drop and de Vries 1974). Several of Drop’s former students at Utrecht University tried to develop procedures for teaching secondary school pupils how to analyze and evaluate argumentative texts. The most important of these “procedurists” are Peter Jan Schellens, Gerard Verhoeven, and Paul van den Hoven. Since they took their inspiration for the development of their procedures not only in the Toulmin model and the American debate tradition but also in Perelman and Olbrechts-Tyteca’s new rhetoric, Braet (1999) characterizes their approach as “rhetorical procedurism” (p. 30).⁶⁰

The procedure for the analysis and evaluation of argumentative discourse that has been developed by the Dutch procedurists has never led to a fully fledged theory of argumentation. Van den Hoven (1984) concentrated in his doctoral dissertation on developing a procedure for the analytical reconstruction of argumentative discourse. Of a more recent date are his efforts to develop instruments for the analysis of visual argumentation (e.g., van den Hoven 2012). Schellens (1985) devoted his doctoral dissertation to developing – based on existing sources such as the new rhetoric and Hastings (1962) – a theory of argument schemes as part of a procedure for the evaluation of argumentative discourse. These preparatory efforts

⁶⁰ See Sect. 8.2 of this volume for a discussion of the American debate tradition and Chap. 5, “The New Rhetoric” for a discussion of Perelman and Olbrechts-Tyteca’s new rhetoric.

eventually led to the development of a practical course book by Schellens and Verhoeven (1988) with instructions for the analysis and critical evaluation of argumentative texts.

As a theoretical background of this approach, Schellens (1985) had presented a fourfold typology of argument schemes, covering many different types of argumentation, such as argumentation from example, argumentation from authority, and argumentation from analogy. In a later article, Schellens (1991) related his approach to argument schemes to the theory of fallacies by defining a fallacy as an argument scheme that has not been applied correctly. As is also described in other approaches, the critical reader of an argumentative text can uncover such a fallacy committed by the writer by checking whether the critical questions associated with the argument scheme at issue can be answered in a satisfactory way.

Much later, in collaboration with other researchers at the University of Nijmegen, Schellens concentrated more strongly on the related field of persuasion research (e.g., Schellens and de Jong 2004). Much of the research that is carried out within this field is empirical in nature and is to some extent based on theoretical concepts developed within argumentation theory (see Sects. 8.8 and 12.4 of this volume).⁶¹

At Leiden University, Antoine Braet developed an approach to argumentation that can be characterized as a combination of speech communication and classical rhetoric.⁶² Emphasizing the reasonableness of the classical rhetorical instructions regarding the effectiveness of argumentative discourse, Braet aimed to actualize and apply insights from classical rhetoric to develop a method for teaching secondary school pupils how to write argumentative texts (1979–1980, 1995) and how to conduct discussions or debates (Braet and Schouw 1998). According to Braet, the rhetorical approach to argumentation is ideally suited for this purpose, because (1) rhetoric does consist not only of a theory of persuasion but also of a critical theory of argument evaluation; (2) there is a large overlap between the rhetorical norms for the effectiveness of argumentation and the dialectical norms for the reasonableness of argumentation; and (3) rhetoric, again like dialectic, does in fact apply to the dialectical situation of two parties arguing their case in front of a judging audience (Braet 1999, pp. 34–35). In a later publication, Braet (2007) reiterates his views on the reasonableness of rhetorical instructions by analyzing three works that are central to the tradition of classical rhetoric: the *Rhetorica ad Alexandrum*, Aristotle's *Rhetorica*, and the rhetoric of Hermagoras of Temnos. In the analysis, Braet aims to reconstruct the classical concepts of “status theory,” “enthymemes,” “topics,” and “fallacies” as early contributions to the development of a normative theory of argumentation. Earlier versions of parts of the book are also published in English (e.g., Braet 1987, 1996, 2004).

⁶¹ The researchers involved in this type of research include Burgers, van Enschoot, Hoeken, Hornikx, Hustinx, de Jong, van Mulken, and Šorm.

⁶² Braet (2007, p. 302) emphasizes that pragma-dialectics is the most important modern source of inspiration for his approach.

In the Netherlands and the Dutch-speaking part of Belgium, several other scholars have been working in the field of argumentation theory. At Leiden University, for instance, Ton van Haaften conducts from a pragma-dialectical and rhetorical perspective research on the (persuasive) effects of language use in parliamentary debates. Henrike Jansen describes various types of arguments from a pragma-dialectical perspective that incorporates insights from classical and modern rhetoric and pragmatics. At Lessius University College in Antwerp, Hilde van Belle teaches and writes on argumentation and rhetoric. At the University of Ghent, Jan Willem Wieland examines infinite regress arguments in philosophy.

12.9 Argumentation Studies in French-Speaking Areas

In Chap. 9, “Linguistic Approaches” of this volume, dealing with linguistic approaches to argumentation, a great deal of attention is paid to the important contributions made to this take on argumentation theory in the French-speaking world. In fact, argumentation theory in these areas is to a large extent dominated by approaches starting from a linguistic and descriptive perspective. Nevertheless, other approaches have been developed as well, although it must be acknowledged that they, too, are often strongly influenced by the linguistic perspective. This applies clearly, for instance, to several of the cognitive and rhetorical approaches that have been proposed. It is remarkable that the rhetorical perspective, after it had been held in low esteem for a long time, has gradually started to make a comeback, especially after Perelman and Olbrechts-Tyteca’s new rhetoric has become more influential. Since the 1970s, next to – and sometimes in combination with – linguistic and cognitive approaches, various authors have made interesting contributions to argumentation theory starting from a primarily rhetorical angle.⁶³

A linguistic approach we have discussed extensively in Sect. 9.3 is the semantic approach developed by Ducrot and Anscombre, in which argumentation is seen as an intrinsic component of the meaning of utterances. Working in this tradition is, for instance, the linguist Pierre-Yves Raccach, who developed a “semantics of point of view.”⁶⁴ This semantic theory is aimed at explaining how language makes it possible to let the implicit points of view of actors (the underlying ideological representations) come to the surface (Raccach 2006, 2011).

A second linguistic approach to argumentation is cognitive in nature. Georges Vignaux, a logician and cognitive psychologist, has continued the work of

⁶³ As an exception to the predominantly descriptive approaches to argumentation in the French-speaking areas, Philippe Breton, an important French argumentation scholar and communication theorist, proposed a normative approach (Breton 1996). In 1996, a French translation was published of van Eemeren and Grootendorst’s (1992a), which explains their normative views concerning argumentative discourse and the fallacies. French translations have been published of van Eemeren and Grootendorst’s (1992a) and Woods and Walton’s normative approaches (1996 and 1992, respectively).

⁶⁴ Raccach is a member of the Laboratoire Ligérien de Linguistique at the University of Orleans.

J.-B. Grize and his colleagues in Neuchâtel (see [Sect. 9.2](#)) in France. Vignaux (1976, 1988, 1999, 2004) aims to identify the natural logic of argumentation and the logico-discursive operations involved in this logic.

Other present-day French (pragma)linguistic approaches to argumentation combine concepts from classical rhetoric and Perelman and Olbrechts-Tyteca's new rhetoric with insights from discourse analysis and conversation analysis. Important examples of such discourse-analytical approaches to argumentation are those of Christian Plantin and Marianne Doury (see [Sect. 9.4](#)). Another well-known discourse analyst who pays attention to argumentation is the linguist Dominique Maingueneau (1994, 1996). In addition, the important French discourse analyst Patrick Charaudeau has published on argumentative discourse (Charaudeau 1992, 2008). Based on her doctoral dissertation, Cristina Demaître-Lahaye (2011) published a monograph on the pragmatic strategies used in different communicative contexts to dissuade people from committing suicide.

At the University of Versailles St-Quentin-en-Yvelines, Marta Spranzi, specialist in the history and philosophy of science, has published a book on Aristotelian dialectics that connects with argumentation theory (Spranzi 2011). Other work by Spranzi is in the field of the history of science and focuses in particular on Galileo (Spranzi 2004a, b). At present, her research concentrates on the field of medical ethics and communication. Another French-speaking researcher who approaches argumentation from an interdisciplinary perspective is Eabrasu, who has written a defense of Hoppe's argumentation ethics (Eabrasu 2009).⁶⁵ Controversies and public debate are studied from a sociological perspective by Francis Chateauraynaud (Chateauraynaud 2011).⁶⁶ Michel Dufour (Communication and Media Department of University Sorbonne Nouvelle) authored an informal logic textbook (Dufour 2008). In addition, he published papers on scientific and nonscientific explanations (Dufour 2010).

Although France has had an important rhetorical tradition,⁶⁷ at the end of the nineteenth century rhetoric vanished from the state education curriculum, after severe criticisms of its nonscientific character. This development has greatly influenced the position of rhetoric in France up to the present day. Generally speaking, even now, only the history of rhetoric is considered to be a subject worthy of academic attention.

An important French rhetorical scholar of recent times was Olivier Reboul.⁶⁸ In 1991, Reboul published an introduction to rhetoric that deals with the history of rhetoric, with rhetorical strategies and figures, as well as with the distinctions

⁶⁵ Eabrasu is assistant professor of Economy and Law, group ESC-Troyes.

⁶⁶ Chateauraynaud is director of studies at the École des Hautes Études en Sciences Sociales in Paris and founder of the GSPR (group of pragmatic and reflexive sociology).

⁶⁷ Two important books on the classical rhetorical figures which appeared in the eighteenth and the beginning of the nineteenth century are Dumarsais's (1988) study of tropes, first published in 1730, and Fontanier's (1968) study of figures of speech, first published in 1821 and 1827.

⁶⁸ During the later part of his career, Reboul was professor of philosophy at the University of Strasbourg. He died in 1992.

between various types of arguments (Reboul 1991). According to Reboul (1988), argumentation has a number of rhetorical properties that distinguish it from demonstrative proof: It is conducted in ordinary language and directed at an audience, its premises are at best plausible, and its inferences are not compelling. Dialectics is for Reboul (1990) the intellectual instrument of rhetoric, in distinction to the emotive means of persuasion.

Another well-known French rhetorician, specializing in the history of rhetoric, is Françoise Douay-Soublin, who has edited Dumarsais's (1988) study of tropes from 1730. She also published on French rhetoric in the seventeenth, eighteenth, and nineteenth century (Douay-Soublin 1990a, b, 1994a, b). At the University of Lyon 2, Joseph Dichy, together with Véronique Traverso, leads the group GRIAF (Group of Research on Interactions in Arab and French).⁶⁹ Part of the research conducted by this group focuses on such subjects as medieval Arab rhetoric and argumentative text analysis (Dichy 2003).

Just as in France, in the French-speaking part of Switzerland, the research on argumentation is predominantly linguistic and cognitive in nature. Since the 1960s, the University of Neuchâtel has been a center of argumentation research. As is explained in Sect. 9.2, this is where Jean-Blaise Grize and his colleagues developed their theory of natural logic, which is both linguistic and epistemological in nature, as an alternative to formal logic.

At present, at the Institut des Sciences du Langage et de la Communication (Institute of Language and Communication Sciences) of the University of Neuchâtel, a number of researchers conduct research extending to the field of argumentation theory. The linguist Louis de Saussure, for one, specializes in the analysis of persuasive and manipulative discourse. He has published essays on argumentative indicators and on speaker commitment in argumentative discourse (de Saussure 2010; de Saussure and Oswald 2009). Thierry Herman, a rhetorician and discourse analyst, concentrates his research on rhetoric and argumentation, including critical thinking and the analysis of political and public discourse (Herman 2005, 2008a, 2011). In Herman (2008b), he analyzed Charles de Gaulle's war rhetoric.

A young linguist whose research interests lie at the interface between cognitive pragmatics, linguistics, cognitive psychology, argumentation theory, and discourse analysis is Steve Oswald. Oswald has investigated, among other things, the compatibility of pragma-dialectics with cognitive theories such as relevance theory (Oswald 2007). Starting from a cognitive-pragmatic perspective, he has also conducted research on uncooperative and deceptive or manipulative communication (Oswald 2010). Part of this research has been undertaken together with Didier Maillat, professor of English linguistics at the University of Fribourg

⁶⁹ Dichy is professor of Arab linguistics. Traverso is a specialist in conversational analysis, pragmatics, and intercultural communication. She is director of research at the CNRS, Lyon 2 University. Some of her work is in the field of argumentation (Doury and Traverso 2000; Doury et al. 2000).

(Maillat and Oswald 2009, 2011). Oswald's most recent work concentrates on fallacious argument and is aimed at integrating insights from cognitive psychological approaches with concepts from argumentation theory (Oswald 2011).

At the University of Geneva, a group of Francophone Swiss pragma-linguists developed in the 1980s the "Geneva model of discourse analysis," a hierarchical and functional model of discourse structure. The model is intended to provide a systematic account of the structure of both monological and dialogical discourses. According to Filliettaz and Roulet (2002, p. 369), the research combines concepts from speech act theory with a unified theory of human behavior and a study of discourse relations and discourse markers inspired by Ducrot et al. (1980). The main contributions to the development of the model have been made by Antoine Auchlin (1981), Jacques Moeschler (1985), and Eddy Roulet (Roulet 1989; Roulet et al. 1985). In the 1990s, the Geneva model underwent a major revision to make it possible to do justice to both social and cognitive factors in the description of discourse (Roulet 1999; Roulet et al. 2001).

At the University of Lausanne, in the department of French linguistics, a number of scholars conduct research in the field of rhetoric, stylistics, discourse analysis, and argumentation. Among them is Jean-Michel Adam, professor of French linguistics, who developed a sequential model of argumentation within the framework of text linguistics (Adam 2004). Together with Marc Bonhomme, he also published a study on argumentation in advertising (Adam and Bonhomme 2003). Marcel Burger specializes in media discourse (Burger 2005). He has edited with Guylaine Martel a volume on argumentation and communication in the media (Burger et al. 2005). Raphaël Micheli is a discourse analyst and rhetorician who examines the function of argumentation in discourse genres such as political and media discourse (Micheli 2010). He also published a paper on the relationship between argumentation and persuasion (Micheli 2012). Another scholar from the University of Lausanne that is to be mentioned is Jérôme Jacquin, a specialist in the field of discourse and conversation analysis. Jacquin (2012) provides an argumentative analysis of the French President Georges Pompidou's speeches in 1968. Together with Burger and Micheli, he has also edited a volume on political discourse and confrontation in the media (Burger et al. 2011).

At the University of Bern, finally, professor of French linguistics Marc Bonhomme, who we already mentioned, is a specialist in the field of stylistics. He has published several semantic and pragmatic analyses of rhetorical figures of speech (Bonhomme 1987, 1998, 2005, 2006).

In the French-speaking part of Canada, there are a number of scholars working in the field of argumentation theory. At the University Laval in Québec City, Professor Gilles Gauthier of the department of information and communication specializes in argumentation and communication in political discourse (Gauthier 2004). Together with Breton, Gauthier published a historical overview of the study of argumentation from antiquity to modern times (Breton and Gauthier 2011). In the same department, Guylaine Martel applies rhetorical and discourse-analytical instruments to argumentation in public debate (Martel 2008). Also at the University Laval, but in the department of languages, linguistics, and translation, Diane Vincent uses

methods from discourse and conversation analysis in her characterization of public debate (Vincent 2009). At McGill University in Montreal, Marc Angenot, a Belgian-Canadian professor in the history of ideas and discourse analysis, published several books on rhetoric and argumentation (Angenot 1982, 2004).⁷⁰

In the French-speaking part of Belgium, argumentation has been predominantly studied from a rhetorical perspective. Since the 1970s, two neo-rhetorical approaches have been developed. Both approaches have resulted in a series of characteristic publications.

The first rhetorical approach is that of the *École de Bruxelles* (School of Brussels), founded by Chaim Perelman (see Chap. 5, “The New Rhetoric” of this volume) at the Free University of Brussels. The approach to rhetoric of this school can be seen as a continuation of the Aristotelian tradition of viewing rhetoric as the study of all available means of persuasion, both argumentative and stylistic in nature. After Perelman’s death in 1984, Michel Meyer, his collaborator, succeeded him as professor of rhetoric and argumentation. Meyer also took over Perelman’s task as director of the *Revue internationale de philosophie*, an international journal of philosophy.⁷¹

Out of dissatisfaction with formal logic, Meyer developed in the early 1970s a philosophical approach to argumentation, the foundations of which are rhetorical: *problematology* (Meyer 1976, 1982a, b, 1986, 1988). With his problematology, he aims to make a critical but constructive contribution to the traditional conception of science. In 1995, the English translation of his thesis *Of Problematology: Philosophy, Science and Language* (first published in French in 1976) appeared. In 2000, Meyer published the treatise *Questionnement et historicité* [Questionability and historicity] in which he systematically expounds the philosophy of problematology. In 2008, *Principia rhetorica: Une théorie générale de l’argumentation* [Principia rhetorica: A general theory of argumentation] was published, in which Meyer presents a general theory of argumentation that takes a number of different major approaches to argumentation and rhetoric into account.

The basis for Meyer’s synthesis of theoretical approaches is the notion of “questioning,” or “problematizing.” According to Meyer’s problematological approach, every utterance can be used for two purposes: to express a question (or “problem”) and to provide an answer (or “solution”). A question is “an obstacle, a difficulty, an exigency of choice, and therefore an appeal for a decision” (Meyer 1986, p. 118). Since all discourse, from phrase to text, can serve the double function of expressing problems and presenting solutions, any piece of discourse can mark the question as well as the solution. In Meyer’s view, argumentation pertains to the theory of questioning: “What is an argument but an opinion on a question? To raise

⁷⁰ Angenot also holds a chair of rhetoric at the Free University of Brussels.

⁷¹ On the occasion of Perelman’s 100th birthday in 2012, Meyer co-edited a volume on Perelman’s work together with Benoît Frydman (Frydman and Meyer 2012).

a question [...] is to argue” (Meyer 1982b, p. 99). The function of argumentative discourse is to provide an answer to a specific problem in a specific context. Final answers are not to be expected, because they can only be provided in the formal language of a formal logic in which there is no room for doubt or contradictory propositions.

The second rhetorical approach stemming from the French-speaking part of Belgium is developed by the interdisciplinary *Groupe μ* of the University of Liège.⁷² In opposition with Perelman’s views on rhetoric, this group focuses on the stylistic aspects of rhetoric and is mainly concerned with the literary (or poetic) function of language.⁷³ Their first major publication appeared in 1970: *Rhétorique générale* [A general rhetoric] (the English translation was published in 1981). In this book an explanatory model of rhetorical figures of speech is presented, making use of a structuralist linguistic approach. The group also developed a theoretical approach to visual rhetoric and visual semiotics (Groupe μ 1992).

At the beginning of 2000, at the Free University of Brussels, the *Groupe de recherche en Rhétorique et en Argumentation Linguistique* (GRAL) [Research group on rhetoric and on linguistic argumentation] was founded. The research leader is Emmanuelle Danblon (Free University of Brussels), who is also secretary general of the Perelman Foundation. Among the other members of GRAL are Loïc Nicolas, Benoît Sans, Victor Ferry, Ingrid Mayeur, and Alice Toma. Members of GRAL study argumentation both from a rhetorical and from a linguistic perspective, thus uniting the two Belgian rhetorical traditions. The research program of GRAL is interdisciplinary: In their study of argumentation and rhetoric, these researchers make use of insights from the history of rhetoric, legal studies, political philosophy, psychology, (bio)ethics, anthropology, literature, and philosophy of mind. In 2011 the group started a systematic exploration of the Perelman archives.

GRAL member Emmanuelle Danblon aims to combine traditional rhetoric with insights from present-day linguistics. Her research topics are rhetoric, argumentation theory, discourse, epistemology, and rationality. She has written several books in the field of argumentation theory and rhetoric (Danblon 2002, 2004, 2005, 2013). In Danblon (2002), she discusses the relationship between rhetoric and rationality, opting for a cognitive perspective and drawing a parallel between forms of reasoning (induction, abduction, and deduction) and the development of reasoning skills. Danblon (2005) presents an overview of the origins of rhetoric, reviews the main contemporary argumentative approaches, and discusses the role of rhetoric in modern society. Finally, Danblon (2013) goes back to the roots of rhetoric, by analyzing rhetoric as a technique developed to enable every citizen to speak in public.

⁷² Among the members of Groupe μ are Francis Édeline, Jean-Marie Klinkenberg, Jacques Dubois, Francis Pire, Hadelin Triron, and Philippe Minguet.

⁷³ The opposition to Perelman’s rhetoric was inspired by Roland Barthes’s (1970) view that rhetoric is an outdated discipline and cannot be considered as a serious object of study by theorists of language.

12.10 Argumentation Studies in Italian-Speaking Areas

Since the 1960s, there has been a steadily growing interest in argumentation in Italy.⁷⁴ Influenced by the Italian translation of Perelman and Olbrechts-Tyteca's *New rhetoric*, which appeared in 1966, researchers have been examining argumentation as a way of using language for influencing others.⁷⁵ Until the 1990s, most of the research concentrated on rhetorical aspects of argumentative discourse, focusing in particular on stylistic characteristics. This interest in rhetorical figures and stylistics was stimulated by the Italian translation in 1969 of Lausberg's *Elements of rhetoric* and the publication of Groupe μ 's (1970, 1981) *Rhétorique générale* [General rhetoric]. After 1990, philosophical and dialectical approaches to argumentation started to be developed. A distinctive feature of present-day argumentation studies in Italy is the focus on argumentation in specific institutional contexts – from the legal, the political, and the medical, to the commercial.

The *rhetorical* publications concentrated to a large extent on explaining the function of rhetorical devices. Renato Barilli (1969), Paolo Valesio (1980), and Cesare Segre (1985) testify to this particular interest. Until the late 1960s, rhetoric was viewed either as the art of linguistic cosmetics or as the art of (manipulative) persuasion. In *Novantiqua*, Valesio (1980) argues that these conceptions of rhetoric are not tenable. He defends the view that every statement is rhetorically marked. According to Valesio, rhetoric is “all of language, in its realization as discourse” (p. 7). In such a conception of rhetoric, there is no clear division possible between a rhetorical and a linguistic analysis of discourse.

In 1989, Mortara Garavelli published a comprehensive handbook of rhetoric, *Manuale di retorica*. Another important rhetorical contribution is Adelino Cattani's (1990) study of modes of arguing. Cattani reevaluates rhetoric as a theory of discourse and an instrument for describing argumentative practice. In 1995, Cattani treats the subject of fallacies from a rhetorical perspective. Whether an argument is fallacious or not depends in such a perspective on the specific situation in which the argument is put forward and the judgement of the addressee. In 2001, Cattani published a historical overview of the use of rhetorical techniques in debates (Cattani 2001).

Sorin Stati (1931–2008), a linguist of Rumanian origin, published in 2002 a monograph on the analysis of argumentation in which rhetorical, logical, and linguistic perspectives are combined (Stati 2002).⁷⁶ Franca Piazza presented a few years later a study of rhetoric in the twentieth century (Piazza 2004) as well

⁷⁴ The semantic–pragmatic approach to argumentation of the Luganese scholars with an Italian background is discussed in Sect. 9.5 of this volume.

⁷⁵ The Italian translation of Perelman and Olbrechts-Tyteca (1958) in 1966 was introduced by the philosopher Bobbio. Its publication led to philosophical, sociological, and semantic reflection on argumentation. In the words of Eco (1987): “I remember the impact that [...] Perelman and Olbrechts-Tyteca's book had upon us: the field of argumentation, including that bound to philosophy, is that of the plausible and the probable” (p. 14).

⁷⁶ For the most part of his career, Stati was a professor of linguistics at the University of Bologna.

as a study of Aristotle's rhetoric (Piazza 2008). Social psychologist Nicoletta Cavazza analyzed the mechanisms that are activated in the persuasive procedure and investigated the contexts and conditions which enable social actors in various situations to be persuaded (Cavazza 2006). In 2009, Cattani edited, together with Cantù, Testa, and Vidali, a volume on the developments in argumentation theory 50 years after Perelman and Toulmin (Cattani et al. 2009).

An important *philosophical* contribution to the Italian study of argumentation is Marcello Pera's (1991) analysis of rhetoric, dialectic, and science in *The Discourses of Science* (English translation, 1994). Pera proposes to approach reasoning in science from a combined rhetorical and dialectical perspective. In his opinion, the logical ideal model of scientific method is untenable. According to Pera, not just nature and the inquiring mind are involved in the conduct of science but also a questioning community, which determines through a process of attack, defense, and dispute what science is. Rhetoric is, in Pera's view, an essential element in the constitution of science as the practice of persuasive argumentation through which research results gain acceptance.

Pera (1994) makes a distinction between *scientific rhetoric*, that is, "those persuasive forms of reasoning or argumentation that aim at changing the belief system of an audience in scientific debates," and *scientific dialectics*, "the logic or canon of validation of those forms" (p. 58). To acquire a clearer picture of what scientific rhetoric amounts to in practice, he examines the uses of argumentation in Galileo's *Dialogue*, Darwin's *Origin*, and the "big-bang steady state controversy" in cosmology. From his analysis, Pera draws the conclusion that scientists resort primarily to rhetoric in the following scientific contexts: (1) when attempting to make the choice of a new methodological procedure acceptable, (2) when arguing for a specific interpretation of a methodological rule, (3) when attempting to overcome objections concerning the application of a rule to a concrete case, (4) when justifying a starting point, (5) when attributing a positive degree of plausibility to a hypothesis, (6) when criticizing or discrediting rival hypotheses, and (7) when rejecting objections against a hypothesis.

In formal logic arguments are examined *by themselves* to determine whether they are valid, but whether they are correct or incorrect should, according to Pera (1994), be established in a debate, that is, in a specific situation for a specific audience. In a debate, an argument is submitted to certain constraints or debating rules which determine which moves are permitted and prohibited. It is the task of scientific dialecticians to formulate such rules for scientific arguments. The rules of scientific dialectics are of two types: rules for conducting a debate, disciplining the type of exchange allowed between the interlocutors and rules for adjudicating a debate, determining the points bestowed on each side, and the awarding of victory (pp. 121–126). In many respects, Pera's approach is similar to the pragma-dialectical approach to argumentation discussed in Chap. 10, "The Pragma-Dialectical Theory of Argumentation" of this volume.

Sara Rubinelli, an Italian argumentation scholar working in Switzerland, discusses in *Ars topica* Aristotle's and Cicero's methods of *topoi* and their relationship (Rubinelli 2009). Her monograph gives an interpretation rooted philologically

in the historical context of *topoi* and aims to lay the ground for evaluating the relevance of classical approaches to modern argumentation research. Another philosophical contribution to the study of argumentation in Italy is Andrea Gilardoni's (2008) handbook on logic and argumentation, which contains a compilation of insights from logic, argumentation theory, and rhetoric.⁷⁷ In addition, the epistemologist and political philosopher Franca d'Agostini published studies on reasonable and fallacious arguments in public debate (d'Agostini 2010) and on the argumentum ad ignorantiam (d'Agostini 2011).

An important *dialectical* contribution to the study of argumentation is Paola Cantù and Italo Testa's (2006) introduction to dialogue logics. In their study, they discuss various approaches to argumentation, both descriptive and normative, with an emphasis on dialogical and dialectical approaches, such as Hintikka's dialectical approach, van Eemeren and Grootendorst's pragma-dialectics, and Walton and Krabbe's dialogue models.⁷⁸

In Italian argumentation studies, a great deal of attention is paid to argumentation in different *institutional contexts*. In particular the legal domain is well-represented. Among the authors engaged in research on argumentation in this domain are Guglielmo Gulotta and Luisa Puddu (2004). They analyze the argumentative strategies and techniques the prosecutor or the counsel can use in a criminal trial. Davide Mazzi specializes in the linguistic analysis of judicial argumentation (Mazzi 2007a, b). In the legal department of the University of Trento, some scholars conduct research on legal argumentation. Maurizio Manzin, for one, has published several volumes on legal rhetoric (2012a; b).⁷⁹ At the same university, Serena Tomasi (2011) analyzes the Italian criminal trial from a rhetorical perspective. At Bocconi University in Milan, Damiano Canale and Giovanni Tuzet conduct research in the field of legal interpretation and argumentation. Together they published a number of articles on the use of particular types of arguments in legal practice (Canale and Tuzet 2008, 2009, 2010, 2011). Sergio Novani (2011a, b) from the University of Genoa examines how thought experiments and testimonial argumentation in a legal context can be analyzed.

A young researcher focusing on the political domain is Laura Vincze. In her doctoral dissertation about the use of persuasive strategies by politicians (Vincze 2010), she pays attention to verbal strategies as well as gestures and posture that speakers use in persuading their audience. Vincze makes a comparison between the persuasive strategies the French presidential candidates Ségolène Royal and Nicolas Sarkozy employed in their election campaigns.

⁷⁷ Gilardoni also translated van Eemeren (2010) (with S. Bigi), van Eemeren and Grootendorst (2004), and van Eemeren, Grootendorst and Snoeck Henkemans (2002a) into Italian (2014, 2008, and 2011), respectively.

⁷⁸ In Cantù and Testa (2011), the relationship between developments in argumentation theory and artificial intelligence is discussed.

⁷⁹ With Gianfranco Ferarri, Manzin edited a volume on the role of rhetoric in the legal profession (Ferrari and Manzin 2004) and with Puppo a volume on the cross-examination (Manzin and Puppo 2008).

A researcher whose work concentrates on the commercial domain is Annalisa Cattani. Cattani (2003, 2007, 2009) analyzes the use of both verbal and visual argumentative techniques in advertising.

Sara Rubinelli, who we already mentioned, has focused since the early part of the twenty-first century on the use of argumentation in the domain of health care. With Peter Schulz she has analyzed the role argumentation can play in doctor–patient interaction (Schulz and Rubinelli 2008). Together with Schulz and Kent Nakamoto, Rubinelli has also evaluated the use of argumentation in direct-to-consumer advertising of prescription drugs (Rubinelli et al. 2008). With Snoeck Henkemans, Rubinelli edited in 2012 a special issue on argumentation and health of the *Journal of Argumentation in Context*.⁸⁰ Another Italian researcher engaged in the field of medical argumentation is Sarah Bigi, who concentrates on the use of authority argumentation and *ethos* in interactions between doctors and patients (Bigi 2011, 2012). Gianmarco Manfrida (2003) analyzes the use of narration and argumentation in relational psychotherapy. According to Manfrida, psychotherapists need to use persuasive strategies in their therapy to undermine the patients’ previously held opinions on a logical and emotional level and to open them up to a new point of view.

Finally, scholars of Italian origin play an important part in research in the context of argumentation and computation (see also Chap. 11, “Argumentation and Artificial Intelligence” of this volume). Floriana Grasso of the University of Liverpool is one of the researchers active in this field. Part of her research focuses on ways of modelling speaker’s goals and persuasive strategies, drawing on classical argumentation theory and cognitive modelling. A major area of application for her research is health informatics: providing personalized and persuasive information or advice on healthier lifestyles (Grasso and Paris 2011). Another Italian researcher in the field of argument and computation is Fabio Paglieri. His research concentrates on decision-making for action and on belief dynamics, both in an individual sense (belief revision) and in a social sense (argumentation) (Castelfranchi and Paglieri 2011).

12.11 Argumentation Studies in Eastern Europe

In Poland, the interest in argumentation theory is remarkably vivid. It is in fact based on an old and strong Polish research tradition of theorizing about logic in relation to the use of reasoning in human communication. Tarski (1995), for one, expressed his firm belief that the diffusion of knowledge of logic may contribute positively to the normalization of human relationships:

For, on the one hand, by making the meaning of concepts precise and uniform in its own field, and by stressing the necessity of such a precision and uniformization in any other

⁸⁰ Since 2010, Rubinelli is engaged in creating a research program on argumentation at the University of Lucerne, with a focus on rational persuasion in decision-making and argumentation skills in consumers and health professionals’ education (Zanini and Rubinelli 2012; Rubinelli and Zanini 2012).

domain, logic leads to the possibility of better understanding between those who have the will to do so. And, on the other hand, by perfecting and sharpening the tools of thought, it makes man more critical – and thus makes less likely their being misled by all the pseudo-reasonings to which they are in various parts of the world incessantly exposed today. (p. xiii)

We will first pay attention to the historical background of the study of argumentation in Poland, distinguishing between various stages in its development. Then we will turn to the current situation and discuss the research trends that are – in line with the tradition – most prominent in present-day Polish argumentation theory.

Between 1930 and 1970, when the early studies in Polish argumentation theory were conducted, the Lvov–Warsaw School was dominant. Although the term *argumentation theory* was not yet used, in the philosophy of language and logic that was practiced by Kazimierz Ajdukiewicz, Tadeusz Czeżowski, Stanisław Jaśkowski, Stanisław Kamiński, Seweryna Łuszczewska-Romahnowa, and their collaborators, a great many topics were already examined that are nowadays central in pragma-dialectics and informal logic (see Koszowy 2011). Among them are, next to Ajdukiewicz's (1974) program of pragmatic logic and pragmatic methodology, Łuszczewska-Romahnowa's (1966) context-related pragmatic account of inference, Jaśkowski's (1948) discursive paraconsistent discussion logic, and Kamiński's (1962) analyses of the concept of a logical fallacy, language precision as a necessary condition of reasonable discussion, logical culture as an ideal for teaching critical thinking skills, and argumentation in the context of philosophy and methodology of science. Although the Lvov–Warsaw School tended to be in the first place formal, they were also keen on modelling and teaching real-life reasoning. This explains why studies were devoted to argument analysis and evaluation, and a Polish analytical tradition of studying language and reasoning came into being.⁸¹

From the 1980s onwards, argumentation theory and logic were examined in philosophical logic, mainly in departments of philosophy. The first attempts were made to familiarize Polish philosophy with contemporary studies in argumentation theory. This also involved a turn from formal and mathematical logic – dominant in Polish research and teaching, even on the undergraduate level – to the study of the real-life reasoning and critical thinking. Scholars such as Teresa Hołówka, Witold Marciszewski, Wojciech Suchoń, and Marek Tokarz developed, for instance, a logical approach to rhetoric and a formal pragmatic account of persuasion (Tokarz 1987, 1993), but they also examined logical fallacies and the logical foundations of the art of argument.⁸²

In the 1990s, in Polish philology and linguistic departments, various scholars started to combine their interest in language studies with making use of insights from rhetoric. They applied classical and other rhetorical theories to the study of

⁸¹ See Ziemiński (1955) and Ajdukiewicz (1965).

⁸² For textbooks written by prominent scholars, see Hołówka (2005), Marciszewski (1969), Tokarz (2006), and Suchoń (2005).

literary style. Among the topics tackled by Czesław Jaroszyński, Piotr Jaroszyński, Mirosław Korolko, Jakub Lichański, and Jerzy Ziomek are the history of rhetoric, rhetoric as an art of eloquent and effective speech, and the use of rhetorical–stylistic techniques (such as metaphor, anaphora, onomatopoeia, and irony) in literature from ancient to modern times.⁸³

Finally, from 2000 onwards, the development is characterized by the building and establishment of the interdisciplinary Polish School of Argumentation. This School includes researchers from different departments, such as philosophy, philology, linguistics, computer science, psychology, and pedagogy. In their approach, the formal study of argument is central, but the starting point is the practice of real-life communication (see Budzyska et al. 2012). In cooperation with the international research community, and publishing primarily in English, they explore possibilities of linking theories of argumentation, dialogue, and persuasion together. United in research groups such as PERSEUS and ZeBraS,⁸⁴ Katarzyna Budzyska, Kamila Dębowska-Kozłowska, Magdalena Kacprzak, Marcin Koszowy, Marcin Selinger, Krzysztof Szymanek, Krzysztof Wieczorek, Maria Załęska, and their students deal with research topics as varied as formal models of argument analysis and evaluation, argument schemes and fallacies, logics for reasoning about persuasion and dialogue, applied formal rhetoric, *ethos* and *ethotic* arguments, cognitive pragmatics in modelling argumentation and dialogue, and critical thinking.⁸⁵

The activities of the Polish School of Argumentation are coordinated by means of ArgDiaP, a forum initiated by Budzyska and Kacprzak and organized under the auspices of the Institute of Philosophy and Sociology of the Polish Academy of Sciences.⁸⁶ The main goal of the forum is to encourage interdisciplinary reflection and discussion on the processes of communication and argumentation, to establish a network of Polish argumentation researchers, and to further coherence in the work of the emerging Polish School of Argumentation. The research, which focuses on “formal rhetoric,” builds on the Polish logical and rhetorical tradition and aims to connect formal and practical aspects of argumentation and communication benefiting from the perspectives provided by all relevant disciplines.

⁸³ See Korolko (1990), Lichański (1992), and Ziomek (1990).

⁸⁴ PERSEUS, founded in 2006, stands for PERSuasiveness (Studies on the Effective Use of argumentS); ZeBraS, founded in 2012, is a research group on applied formal rhetoric.

⁸⁵ See also Załęska (2012b), Szymanek (2001), and Szymanek, Wieczorek, and Wójcik (2004).

⁸⁶ Doctoral dissertations were defended at the Cardinal Stefan Wyszyński University in Warsaw by Katarzyna Budzyska in 2002 on notions of argumentation and proof viewed from a pragmatic perspective, at the University of Wrocław by Tomasz Zarębski in 2003 on the reconstruction and analysis of the conception of rationality in the philosophy of Toulmin, at the John Paul II Catholic University of Lublin by Marcin Koszowy in 2008 on contemporary conceptions of a logical fallacy, at the Adam Mickiewicz University in Poznań by Kamila Dębowska in 2008 on extending the pragma-dialectical model of argumentation, and at the Warsaw University of Technology by Paweł Łoziński in 2012 on context-dependent reasoning in argumentative logics.

The ArgDiaP initiative has led to the publication of several special issues on argumentation, edited by Koszowy, of the Polish journal *Studies in Logic, Grammar and Rhetoric*. In addition, a series of biannual one-day conferences has been organized, hosting next to speakers from all leading Polish universities invited speakers from other countries representing the most prominent approaches to argumentation theory.⁸⁷ In a special issue dedicated to the Polish School of Argumentation of the journal *Argumentation* (2014, no. 2), the guest editors, Budzynska and Koszowy, have brought together a collection of extended versions of papers presented at the international editions of ArgDiaP. The introduction lays out the central themes and the main approaches of the Polish School. Among the contributors are Budzynska, Dębowska-Kozłowska, Kacprzak, Koszowy, and Selinger.

The range of topics examined by the Polish School of Argumentation is rather broad, sometimes extending the boundaries of argumentation theory proper. A first topic that is central in current research is evaluation. Koszowy (2004, 2013) takes a methodological approach based on the claim that some arguments in knowledge-gaining procedures can be successfully evaluated by applying tools stemming from the methodology of science. Dębowska (2010) extends the pragma-dialectical model for the evaluation of the effectiveness and reasonableness of argumentation by introducing an abductive procedure that makes it possible to take the pragmatic relevance of arguments and the global and local goals of the participants in a dialogue into account. Szymanek (2009) proposes a model for analyzing and evaluating argument by similarity for dealing with analogy argumentation, giving a new account of the structure and interpretation of reasoning by similarity with the help of the multiconstraint theory of analogy (Gentner 1983). A formal model of evaluation covering a broad class of arguments in natural contexts is developed by Selinger (2012) by providing a general numerical method for evaluating the strength of arguments.

Another trend consists in studying the rhetorical and persuasive aspects of argumentation. Tokarz (2006), Wieczorek (2007), and Budzynska (2011) examine the links between psychological models and logical models of argumentation. A theoretical framework for describing the structure of arguments against epistemic authority is offered by Załęska (2011), who interprets from the perspective of the interpersonal level two parameters of an expert's good reputation, i.e., solidity and trustworthiness, as two different kinds of *ad hominem*. Budzynska (2012) shows that standard models allow for the reconstruction of circularity only if the circular utterances are interpreted as *ethotic* arguments. She makes clear that their alternative, assertive interpretation requires enriching the existing models with an *ethotic* component relating to the credibility of the performer of the speech acts concerned.

⁸⁷ Other international conferences held in Poland include a conference in 2005 by the Polish Rhetorical Society devoted to rhetoric and argumentation, a conference in 2009 on argumentation and rational change of beliefs at the University of Silesia in Katowice, Ustron, and the conference Pragmatics-2012 on interdisciplinary approaches to pragmatics, rhetoric and argumentation at the University of Łódź.

Selinger (2005) and Załęska (2012a) study the nature of *ethos* in the context of political discourse. Skulska (2013) considers a hierarchy of argument schemes for rhetorical arguments.

A related but different concern is dialogue taxonomy and protocols. Budzyska and Dębowska (2010) propose a model of dialogues aimed at conflict resolution that is a modified and extended version of Walton's model. Budzyska and Reed (2012) present a non-inferential model of ad hominem techniques used in a dialogue. Their approach is built on the following assumptions: (a) that ad hominem is not an inferential, but an undercutting structure; (b) that in some communicative contexts it can be a non-fallacious dialectical technique; and (c) that critical questions associated with Walton's (1998a) ad hominem scheme can be used to determine defensive strategies against ad hominem attacks. An implementation of speech acts in a paraconsistent framework is discussed by Dunin-Kępicz et al. (2012). They analyze speech acts as building blocks of interactions between agents in the context of communicative relations in situations that may require conflict resolution and belief revision. They include perceiving (a) inconsistent information, (b) previously inconsistent information, (c) previously unknown information, (d) unknown information, (e) compatible information, and (f) contradictory information.⁸⁸ Yaskorska et al. (2012) develop a dialogue protocol allowing the representation and elimination of formal fallacies starting from the pragma-dialectical discussion rule that the antagonist may challenge both the propositional content of premises used by the protagonist and the justificatory force of the reasoning. They bring two traditions together to represent this rule formally: Lorenzen's dialogue logic and Prakken's specification of persuasion dialogue games. This results in a procedure in which agents can persuade each other not only about facts but also about the classical propositional validity of the arguments used in the dialogue.

Another strand of research concerns formal and computational models of argument. Budzyska and Kacprzak's (2008) multimodal logic of actions and graded beliefs, AGn, provides a deductive system for reasoning about persuasion processes in distributed systems of agents in circumstances of uncertain and incomplete information. Dunin-Kępicz and Verbrugge (2010) develop a logical theory, TeamLog, that models teamwork in dynamic environments of agents. Selinger (2010) proposes a set-theoretic model of argument structure, and Łoziński (2011, 2012) comes up with an algorithm for incremental argumentation analysis in Carneades.

Argumentation technologies are another focus of attention. In Perseus, Budzyska et al. (2009) provide a software tool that can be used for formal verification of multi-agent systems to examine such issues as what arguments individuals use to successfully convince others and what type of a persuader

⁸⁸ In Dunin-Kępicz et al.'s (2012) approach, the choice of a rule-based, DATALOG-like query language 4QL as a four-valued implementation framework ensures that, unlike in standard two-valued approaches, tractability of the model is maintained.

guarantees victory. In Araucaria-PL, Budzyska (2011) designs the only Polish tool for teaching argumentation theory, based on Araucaria by Reed and Rowe (2004) and extended with a module capturing persuasive aspects of argumentation. In ArgDB-pl, Budzyska (2011) uses the open AIF standard for argument representation for building the first Polish corpus of analyzed natural arguments.⁸⁹

Last, but not least, serious attention is paid to meta-theoretical issues concerning the relationship between the tradition of Polish logical studies and current argumentation research in pragma-dialectics and informal logic (Koszowy 2004, 2011, 2013).⁹⁰

In argumentation theory in Hungary, two schools have developed since the 1980s. First, there is the Budapest School, based in the philosophy program of Eötvös Loránd University Budapest (ELTE). This group of scholars, which includes Imre Ruzsa, László Pólos, András Máté, and László Szabó, studies argumentation and reasoning from classical and modern logical perspectives. After 2000 the Budapest School extended its scope through cooperation with the Technical University of Budapest and Corvinus University. New venues, such as argumentation in the history of science and in the philosophy of science, were explored by researchers such as Gábor Zemplén (2008) and Petra Aczél (2009, 2012). Several case studies were carried out. Gábor Kutrovátz (2010) examined more than 1,000 argumentative online exchanges from the public debate on the H1N1 vaccination. Informed by recent debates in the philosophy of testimony and contributions to argumentation theory such as the Woods–Walton approach, he developed a categorization of the most typical argument schemes. Zemplén (2011) studied historical case studies to investigate the extent to which methodological norms are argumentative tools in scientific controversies. Tihámér Margitay (2004) published the first comprehensive textbook on argumentation.

Second, there is the school originating in the early 1980s in the Janus Pannonius University in Pécs, which has become the University of Pécs. Today, in argumentation research there is active cooperation between the innovative Pécs School and scholars from the University of Debrecen and the University of Szeged. Since 2003 argumentation-related research projects have been carried out in the framework of an inter-university research cooperation funded by the National Science Foundation (OTKA) and the Hungarian Academy of Sciences (MTA).⁹¹ The research is linguistically oriented; it is led by László Komlósi (Pécs), András Kertész (Debrecen), and Enikő T. Németh (Szeged).

⁸⁹ For the standard language for argument representation AIF, see Chesnevar, McGinnis, Modgil, Rahwan, Reed, Simari, South, Vreeswijk, and Willmot (2006).

⁹⁰ The educational ideal of critical thinking is also a matter of academic reflection. It is discussed by Wasilewska-Kamińska (2013) and promoted by means of various textbooks (Hołówska 2005; Szymanek et al. 2004; Tokarz 2006).

⁹¹ The graduate school for linguistics of the University of Debrecen publishes an online journal, *Argumentum*. See Kertész and Rákosi (2009) for a research publication on argumentation stemming from this university.

It is characteristic of the approach chosen by the Pécs group that argumentation is viewed as an interdisciplinary concept that brings together cognitive, cultural, linguistic, literary, and visual phenomena.⁹² The interrelations between the various angles are studied under the general umbrella of “social-interactive construction of meaning.” Next to Komlósi, other contributors are László Tarnay, Zsuzsanna Simonffy, Erzsébet Knipf, Tamás Pólya, Árpád Vígh, Monika Gyuró, and István Tarrósy.⁹³ The theoretical tools they use combine insights from a great many sources: cognitive–discursive and dialogical approaches to argumentation, pragma-dialectics, inferential pragmatics, informal logic, the theory of *topoi*, semiotic traditions,⁹⁴ and the French tradition of studying argumentation in language (Benveniste, Ducrot, and Raccah’s “point of view semantics”⁹⁵), and Groupe μ and the visual rhetorical school of Liège, Belgium.

Komlósi studied general linguistics and modern languages and is now a professor of linguistics and communication at the University of Pécs. He devoted his doctoral dissertation to formal semantics: Montague grammar and its missing pragmatic parameters. His *Habilitationsschrift* was a study on inferential pragmatics. Komlósi’s cognitive interests have strongly influenced his research on discursive argumentation, argument structure, informal logic, reasoning strategies, and inferential pragmatics (e.g., Komlósi 1990, 1997, 2003, 2006, 2007, 2008). Tarnay is an associate professor at the same university. He applied the theory of dialogue games, elaborated in semantics and pragmatics, to the analysis of riddles and proverbs and was involved in literary research based on a model of argumentation which he opposed to the hermeneutic model of interpretation (e.g., Tarnay 1982, 1986, 1990, 1991, 2003). Simonffy, another associate professor at the University of Pécs, studied in France with Raccah and Ducrot. She is interested in applying their argumentative insights to specific linguistic problems, such as indefiniteness and vagueness in meaning and inferential structure (e.g., Simonffy 2010).

In the republics that constituted together the former Yugoslavia, the study of argumentation is not well developed. Nevertheless, some interesting developments have taken place. In the first place in Slovenia, largely due to the influence of Igor Ž. Žagar. It could be claimed that historically the local interest in argumentation

⁹² The University of Pécs has organized several international conferences on various aspects of argumentation. A doctoral dissertation on discourse coherence and arguments in health-related interviews, in which argumentation theory is applied to the clinical interview, was defended in 2007 by Monika Gyuró.

⁹³ Among their joint studies are, for instance, Komlósi and Knipf (1987) and Komlósi and Tarrósy (2010).

⁹⁴ Like in Poland and other parts of Eastern Europe, in Hungary semiotics (including formal and cognitive linguistics) was one of the dominant research paradigms between the mid-1970s and the 1990s. In particular narratology, discourse analysis, and informal logic were dominant, which is clearly manifested in the work of the Pécs School.

⁹⁵ A specific feature of the Pécs group is an ongoing project of comparative analysis of languages, inspired by Raccah.

theory started in the 1960s, when Fran Vatovec taught rhetoric at the University of Ljubljana. Vatovec, however, was not primarily interested in argumentation theory proper, but in journalism and public speaking. The same went for his successor, Boris Grabnar, whose work is eclectic and purely descriptive. In 1991, he published a textbook that provides a general introduction into rhetoric (Grabnar 1991), but this introduction is not free from conceptual mistakes and inconsistencies.

Most of the theoretical work on argumentation theory in Slovenia is carried out by Igor Ž. Žagar and Janja Žmavc at the Center for Discourse Studies of the Educational Research Institute in Ljubljana. At the University of Primorska, they teach a compulsory course in rhetoric and argumentation for students of Slovenian Studies and Media Studies and at the University of Maribor another rhetorically oriented course.⁹⁶ Žagar was also instrumental in realizing a school reform introducing rhetoric in the primary school curriculum. In addition, rhetoric is also taught in commercial schools, albeit merely as *ars recte loquendi*: the art of speaking correctly, fluently, and if it can be also beautifully. In fact, in the teaching of rhetoric in Slovenia, argumentation remains neglected, and if argumentation is taught in connection with rhetoric, this happens always “on the side,” incorporated in other academic disciplines.

The interest in argumentation in Slovenia started when Žagar had been introduced to Ducrot’s theory of argumentation in the language system (see Sect. 9.3 of this volume) while studying in Paris.⁹⁷ His study of philosophy and linguistics, especially of speech acts, led Žagar to the discovery of the “argumentative structures” and “argumentative orientations” which are, according to Ducrot, inherent to a language as a system. Žagar states his starting point as follows:

Argumentation always comes in blocks, consisting of an argument (at least one) and a conclusion, and we always have to consider them together, in relation to one another, not in isolation. [...] [T]here is no absolute and independent orientation an argument can have: it is always limited, explained, and (re)interpreted by the conclusion. And one and the same argument can have (at least?) two different, even opposite, conclusions [...]. Therefore, when assessing and evaluating an argument, we always have to do it in relation to the conclusion reached, within the framework of a given topic, never in isolation. (2008, pp. 162–163)

Žagar received his doctoral degree in sociology of culture from the University of Ljubljana. In 1997 he became head of the Center for Discourse Studies at the Educational Research Institute in Ljubljana. He is (co)author and (co)editor of a great many books and articles covering an intersection of argumentation, pragmatics, and discourse analysis. In his own view, his most important work is in the field of argumentation (argumentation in the language system) and discourse analysis,

⁹⁶ See Zidar Gale et al. (2006).

⁹⁷ Žagar considers himself a follower of Ducrot and mainly works within Ducrot’s “standard theory.” However, he often problematizes some of its concepts and definitions and generalizes others, trying to apply them to different fields.

focusing on topics such as argumentative orientation, argumentative force, argumentative markers/connectives, argumentative scales, argumentative indicators, polyphony, *topoi*, and the discourse–historical approach to critical discourse analysis (e.g., Žagar 1991, 1995, 1999, 2000, 2002, 2008, 2010, 2011; Žagar and Schlamberger Brezar 2009; Žagar and Grgič 2011). It was his work on argumentation that led Žagar to rhetoric, in particular to classical *topoi* theory.

In 2005, Žagar started to collaborate with Žmavc, whose doctoral dissertation on *ethos* in *pathos* in the antique rhetorical tradition he co-supervised. Žmavc's theoretical interests concentrate on the history of classical rhetoric, classical rhetorical concepts, rhetorical theory and practice, the use of *ethos* and *pathos* in argumentation, linguistic pragmatics, and the teaching of rhetoric. In her research, she investigates in the first place the connections between classical rhetorical concepts and contemporary models and their applicability to the analysis of argumentative discourse (e.g., Žmavc 2008a, b, 2012). In the contributions in which she deals with *ethos* she discusses different ancient conceptions of character presentation and proposes an interpretation which covers, in her view, the classical rhetorical concept of *ethos*. Žmavc also conducted the only empirical study so far on rhetorical and argumentative skills of Slovenian students.⁹⁸

In Croatia, the interest in rhetoric reappeared in the 1990s, when the communist period in Yugoslavia had ended. This development, instigated by the late Ivo Škarić, started in the Department of Phonetics of the University of Zagreb in media education. Next to a rhetorical perspective on teaching argumentation, rhetorically oriented argumentation research also started to be published (e.g., Hasanbegović 1988; Visković 1997; Škarić 2011). Gabrijela Kišiček and Davor Stanković provided an analysis of fallacies in Croatian parliamentary debate (Kišiček and Stanković 2011). In addition, Davor Nikolić and Diana Tomić make clear how the Toulmin model can be used in rhetorical education (Nikolić and Tomić 2011).

In Bulgaria, the roots of argumentation theory are definitely rhetorical and date from the beginning of the twentieth century. The first textbook in which a great deal of attention was paid to argumentation was a guide of rhetoric and eloquence by Andrei Toshev, published in 1901. In 1924, Georgi Bakalov examined in a study devoted to public speaking for workers types of arguments that effectively influence mass consciousness.

A strong impetus to the development of modern argumentation theory in Bulgaria was the foundation, in 1976, of the department of rhetoric at Sofia University St. Kliment Ohridski.⁹⁹ From the very beginning, argumentation theory was in that department taught as a symbiosis of logical and psychological methods

⁹⁸ Other Slovenian argumentation researchers are Bregant and Vezjak (2007), who have a descriptive interest in fallacies.

⁹⁹ In the department of rhetoric scores of doctoral dissertations on argumentation theory have been defended.

and techniques.¹⁰⁰ Other universities followed suit by offering rhetoric as a compulsory course or as an elective.¹⁰¹ In the curricula of philosophers, lawyers, and linguists, too, argumentation theory came to play a significant role.

When it comes to theoretical approaches that have had an impact on the development of argumentation theory in Bulgaria, Aristotle's dialectic comes first. It is usually studied in the context of Aristotelian philosophy, together with Aristotle's analytics, rhetoric, and political theory. As Donka Alexandrova (1984, 1985, 2008), Jordan Vedar (2001), Gergana Apostolova (1994, 1999, 2012), and Ivanka Mavrodieva (2010) have shown, due to its holistic and open nature, Aristotle's philosophy has the sustainability to remain pertinent throughout time.

Bulgarian scholarship which has influenced the theorizing includes Kiril Vas(s)il (i)ev (1989) rhetorical study on eloquence, *Красноречието: Аспекти на реториката* [Eloquence: Rhetorical aspects]. In this study this distinguished historian of philosophy examines the relationship between philosophy, ideology, and rhetoric. Dobrin Spassov (1980) and Liuben Sivilov (1981, 1993) explore the relationship between rhetoric and nonformal dialectic logic. Vitan Stefanov (2001, 2003) concentrates on the relationship between formal–logical evidence and argumentation, focusing on logical errors.

In a study on metamorphoses of rhetoric in the twentieth century, Alexandrova (2006) presents the first systematic overview of argumentation theory in Bulgaria. By critically reviewing the most important ideas that have been advanced in the field, she makes clear that the interest in argumentation theory and rhetoric in the second half of the twentieth century is a product of postmodern society. Alexandrova discusses the rise and fall of the ideologies that have led to the collapse of socialism as the greatest social experiment in history, globalization, and the development of an anthropology related to it, but also intercultural dialogue and the role played by the media. In her monograph, the theories of persuasive communication are grouped into two categories: “argumentation theory” and “tropology.” First, four schools on argumentation theory belonging to the first category are discussed: Perelman and Olbrechts-Tyteca's new rhetoric, the Toulmin approach, van Eemeren and Grootendorst's pragma-dialectics, and Brutian's Yerevan School.¹⁰² Next, as part of the second category, rhetorical–stylistic aspects of persuasion are explored from a semiotic perspective.

Perelman's return to Aristotelian complexity was an interesting replacement of the Marxist basic premise of the objectivity of truth

¹⁰⁰ Since 1995, the Bulgarian Association of Rhetoric is another center in developing scientific and educational projects.

¹⁰¹ The interest in argumentation theory in Bulgaria was further stimulated by the international conference on argumentation theory in Amsterdam in 1986 which led to the establishment of the International Society for the Study of Argumentation (ISSA).

¹⁰² Visits to the department of rhetoric in Sofia of the intellectual leaders of three of these schools (Perelman, van Eemeren, and Brutian) have reinforced the impact of their ideas on Bulgarian scholarship.

(Alexandrova 1997, 1999, 2006, 2008).¹⁰³ Brutian's Yerevan School's argumentation theory was still based on the objective truth concept that was the ideological starting point during the period of the Soviet regime, but argumentation, argumentative discourse, and the *topoi* were already viewed from a perspective different from logical demonstration.

Pragma-dialectics was brought closer to Bulgarian research practices by the publication of Bulgarian translations of several key monographs in the Library of Rhetoric, started and edited by Alexandrova.¹⁰⁴ It is now a major influence on argumentation theory in Bulgaria.¹⁰⁵ Mavrodieva (2010) uses Marcin Lewiński's (2010a, b) pragma-dialectical study on the argumentative activity type of Internet political discussion forums as a theoretical and methodological basis for her research on virtual rhetoric.

Leading theorists in current Bulgarian argumentation theory are Alexandrova, Spassov, Vassilev, and Stefanov. In addition, important contributions have been made by some other scholars. Virginia Radeva (2000, 2006), for instance, examines the genesis of philosophical rhetoric. Her thesis is that rhetoric as a science of persuasion in communication has logical and axiological aspects. In her view, rhetorical proof is logical in essence and nature, but rhetorical in its function and application. Radeva makes clear that axiological aspects have their place in the field of rhetoric in so far as the orator's moral and value orientation plays a part in the rhetorical evidence. In *Culture and texts*, Apostolova (2012) discusses specific applications of intercultural rhetoric to the field of English-language learning. She distinguishes between two phases in the learning process: first, argumentation and motivation and second, Systematic Integrated Approach to the Net (SIAN).

Other studies worth mentioning are a monograph by George Polya (1968), in which plausible reasoning is connected with the idea of negotiable premises in rhetorical reasoning, and Apostolova's (2011) discussion of the nature of philosophical argument. Problems of argumentation theory are nowadays also frequently discussed in Bulgarian doctoral dissertations. A dissertation that stands out is Neli Stefanova's (2012) study *Реторическа аргументация в италианския политически дебат от края на XX век* [Rhetorical argumentation in Italian political debate since the end of the twentieth century]. Stefanova discusses the rhetorical

¹⁰³ This replacement, stimulated by Perelman's studies (in particular, Perelman 1968, 1969, 1974, 1979b), also reflected a remarkable change in attitude towards rhetorical practice. Totalitarian management of rhetorical practice had relied on special volumes of instructions for leaders, including party and komsomol secretaries, and the ideology departments of the party committees; a series of monthly magazines served the lower-level secretaries and political instructors.

¹⁰⁴ Bulgarian translations of van Eemeren and Grootendorst (1992a, 2004) were published (2009, 2006, respectively).

¹⁰⁵ The first two volumes of the Library of Rhetoric are translations of *A Systematic Theory of Argumentation* (van Eemeren and Grootendorst 2004), translated by M. Pencheva (published in 2006), and *Argumentation, Communication, and Fallacies* (van Eemeren and Grootendorst 1992a), translated by Donka Alexandrova (published in 2009). A translation of *Strategic Maneuvering in Argumentative Discourse* (van Eemeren 2010) is to be published.

argumentation she is concerned with against the philosophical and political background of the transition from First to Second Italian Republic and the profound changes in sociopolitical communication and political discourse that went with it.

In Romania, argumentation theory has developed since the 1990s in two different environments: in departments of philosophy and, more prominently, in departments of foreign languages and linguistics.¹⁰⁶ At the philosophy department of Babeş-Bolyai University of Cluj-Napoca, Andrei Marga published several studies in which the philosophical and the linguistic perspectives on argumentation are combined (Marga 1992, 2009, 2010). In Marga (1992), for instance, he discusses the Toulmin model together with important flaws in philosophical argumentation, such as the use of the *argumentum ad verecundiam* in several of its variants (pp. 152–157). At the Al. I. Cuza University of Iaşi, Constantin Sălăvăstru (2003), a philosopher who is a very productive argumentation scholar, published the most detailed overview of argumentation studies that has so far appeared in Romanian.¹⁰⁷ Starting from antiquity, he sketches a historical panorama and provides an integrating perspective on argumentation theory.

An influential handbook stemming from foreign languages and linguistics departments is authored by Mariana Tuţescu (1986, 1998) of the University of Bucharest, who addresses a Francophone public. In Romania, argumentation studies in French often focus on linguistic devices such as argumentative indicators and connectors, and they are usually strongly influenced by Anscombe, Ducrot, Grize, and Moeschler (see Chap. 9, “Linguistic Approaches” of this volume). Tuţescu offers in the first place an overview of linguistic insights relevant to argumentation theory. After a short historical presentation of the development of argumentation theory, she discusses insights from Perelman and Olbrechts-Tyteca, Apostel, von Wright, Grize, Vignaux, Toulmin, Ducrot and Anscombe, and van Eemeren and Grootendorst. The argumentative strategies she pays attention to include the use of polemic negation, metaphor, and paradox. Tuţescu also discusses the discursive characteristics of linguistic devices such as the French *mais* [but], *même* [even], and *d’ailleurs* [in fact]. In line with Anscombe and Ducrot, she views “explaining” and “seducing” as guiding the way in which discourse builds itself around major objectives and words are given an argumentative role. Tuţescu’s approach has had a considerable impact on doctoral research in Romanian argumentation theory.

At the University of Bucharest, Liliana Ionescu-Ruxăndoiu and Rodica Ileana Zafiu approach language and discourse from a pragmatic perspective, integrating insights from stylistics, rhetoric, argumentation theory, and discourse analysis. While Ionescu-Ruxăndoiu promotes the study of political argumentation

¹⁰⁶ Argumentation theory is taught in faculties of philosophy, letters, and communication in Bucharest, Iaşi, Cluj, Craiova, Galaţi, and Ploieşti. There are two Romanian journals devoted to argumentation theory: *Argumentum* (published by Al. I. Cuza University of Iaşi since 2002) and *Communication and Argumentation in the Public Sphere* (published by Dunărea de Jos University of Galaţi since 2007).

¹⁰⁷ Another important step in the study of argumentation in Romania is the publication in 2012 of a Romanian translation by A. Stoica of Perelman and Olbrechts-Tyteca (1958).

(2008, 2010),¹⁰⁸ Zafiu applies insights from argumentation theory and rhetoric to various types of argumentative texts. In Zafiu (2003), she makes use of Houtlosser's (1998) distinctions between *opinions*, *attitudes*, *theses*, *conclusions*, and *standpoints* in studying the relationship between argumentation and dialogue as it is reflected in dialogues extracted from the CORV, a corpus of spoken Romanian (put together by Dascălu Jinga 2002). According to Zafiu's research, in everyday conversations Romanian speakers usually advance points of view that challenge *common opinion*. Instead of supporting their standpoints with arguments, they develop subthemes they find easier to discuss. Advancing standpoints and argumentation is often accompanied by hesitation, approximation, vagueness, and attenuation. Zafiu also pays attention to the development of argumentative roles in conversation and the use of linguistic devices for image building.¹⁰⁹

In 2006, at the same university, Isabela Iețcu-Preoteasa (or Iețcu), one of the founding members of the research group on discourse analysis of the Prosper Language Center of the Academy of Economic Studies, published several studies dealing with issues from argumentation theory (for her contributions as Isabela Fairclough, see Sect. 12.2 of this volume). The first is a revised version of the doctoral dissertation she defended in 2004 at the University of Lancaster (Iețcu-Preoteasa 2006). She compares and connects critical discourse analysis and pragma-dialectics with each other: The former is less specific and "less analytical in its description of the normative framework for dialogue," while more precise "in its specification of the various ways in which differences of opinion are approached." Iețcu-Preoteasa points out that "overcoming differences of opinion through dialogue is just one possible scenario" which the speakers may choose (2006, p. 132). She examines in her dissertation the discursive and argumentative strategies used by the Romanian author Horia-Roman Patapievicu in a collection of essays to legitimize economic liberalism in Romania and delegitimize communism after 1989. By integrating insights from critical discourse analysis, pragma-dialectics, and informal logic, on the one hand, and from the theory of modal argument by Angelika Kratzer, on the other hand, she intends to create her own method of analysis. In a second study, Iețcu (2006) includes the notions of modality, evidentiality, and metaphor in her method when she applies the pragma-dialectical concept of *strategic maneuvering* to the analysis of four different types of cases of argumentative discourse. Her approach, which combines various perspectives and takes a great amount of contextual information into account in the analysis, enabled her to draw conclusions that otherwise could not have been reached. She concludes, for instance, that the explicitly dialectical orientation (in the pragma-dialectical sense) of the Romanian intellectuals who became in

¹⁰⁸ See also Constantinescu, Stoica, and Uță Bărbulescu (2012).

¹⁰⁹ Zafiu (2010) contains an analysis of religious texts represented by orthodox sermons, which belong to "the most stable types of texts throughout which the tradition of rhetoric has preserved itself and continued in European culture" (p. 27). In orthodox sermons, reasoning has a different role than, for instance, in scientific texts, and in argumentation it is in a specific way complemented by *ethos* and an "accepted presence of *pathos*" (p. 27).

1989 the model of public dissent gained them a considerable degree of moral and political authority, but concealed the extent to which their arguments were in fact open to the charge of fallaciousness, and obscured the fact that “the dichotomies they constructed for argumentative purposes were often false dilemmas [. . .], their analogies spurious and misleading [. . .]” (p. 273).

For the research group of Argumentation, Rhetoric, and Communication of the Dunărea de Jos University in Galați, pragma-dialectics has become a major source of inspiration.¹¹⁰ Since 2007, a research project has been carried out on strategic maneuvering with dissociation and with evidential markers.¹¹¹ The argumentative technique of dissociation was examined in a series of articles by Anca Gâță and Alina Ganea (e.g., Gâță 2007; Ganea and Gâță 2010). The role of evidential markers in argumentative discourse has been discussed in two monographs and a series of articles by Ganea, Gâță, and Gabriela Scripnic (e.g., Ganea and Gâță 2009; Gâță 2010; Ganea 2011, 2012; Scripnic 2011, 2012a, b). The hypothesis of the researchers is that the rhetorical function of presenting the source of information in argumentative discourse is to draw the other party’s attention to its degree of reliability, thus supporting its dialectical function of ensuring that the argument is built on solid evidence. Making use of extended pragma-dialectics, Simona Mazilu and Daniela Muraru, who are both connected with the project, defended in 2010 at the University of Bucharest their doctoral dissertations devoted to strategic maneuvering in specific cases of argumentative discourse: the Romanian abortion debate and the peace negotiations at Camp David, respectively (Mazilu 2010; Muraru 2010).

Since the late 1990s, in Macedonia there has been a growing interest in argumentation theory – primarily in philosophy, logic, and artificial intelligence but also in law and communication studies and rhetoric. Not only has the role that argumentation theory can play in furthering the development of logic been recognized, but also are the conceptual tools of argumentation theory viewed as practical instruments for judging the quality of any kind of rational discourse. This has led to an expanding engagement of Macedonian scholars from various disciplines in the theoretical study of argumentative phenomena. In this endeavor, insights from various kinds of theoretical approaches to argumentation are brought to bear, including not only the Toulmin perspective, the new rhetoric, pragma-dialectics, and informal logic but also more formally oriented approaches, such as formal dialectic, and insights concerning defeasible reasoning from non-monotonic logic. In addition, critical thinking has become a topic of study both in interdisciplinary curriculums and in summer schools.¹¹²

¹¹⁰ This research group is part of the Centre of Discourse Theory and Practice of the Department of French in the Faculty of Letters. The Centre published a Romanian translation of van Eemeren and Grootendorst (1992a) by A. Gâță in collaboration with C. Andone of the University of Amsterdam (2010).

¹¹¹ Evidential markers, or “evidentials,” are words or phrases indicating the source of information the statement relies on (visual or auditory perception, inference, reported speech, etc.).

¹¹² In 2011, for example, a big interdisciplinary Summer University was organized in Ohrid: “Argumentation: Droit, politique, sciences” [Argumentation: Law, politics, science].

Macedonian argumentation research from the logical–philosophical perspective responds to the challenge to create a theoretical framework for integrating the different paradigms that have been developed in argumentation theory. In the Institute of Philosophy of Ss Cyril and Methodius University in Skopje, the study of argumentation theory was introduced by Violeta Panzova as a continuation of an earlier research project, “Logical analysis and formalization of the Macedonian standard language.” In the new research project, “Contemporary trends in argumentation theory,” the most important approaches to argumentation were scrutinized to develop a conception of logic that is broad enough to deal with the forms, principles, and mechanisms of analytical as well as dialectical reasoning. The historical part of the project concentrated in the first place on Aristotle’s “dialectical” treatises, *Topics*, *Rhetoric*, and *Sophistical Refutations*. Among the main sources for the systematic part of project were the publications of Perelman, Toulmin, Viehweg, Lorenz, Barth and Krabbe, Walton, and van Eemeren and Grootendorst.¹¹³ The focus was on sketching the fundamentals of an integral theory of argumentation.

The main result of the project most pertinent to argumentation theory is Ana Dimiškovska Trajanoska’s (2001) book publication in Macedonian, *Празматиката и теоргијата на аргуменацијата* [Pragmatics and argumentation theory]. The core idea of this study is that argumentation theory involves a pragmatically oriented approach to logic.¹¹⁴ It is an attempt to overcome a reductionist formalized approach to logic by developing an integral conception of logic as a theory of both analytical and non-analytical manifestations of rationality. According to Dimiškovska, starting from the intersubjectivity of communication and the dialogical structure of reasoning, through the analysis of the pragmatic aspects of language, a categorical apparatus can be developed that can be constructively applied in argumentation theory. She demonstrates the relevance of the theory of speech acts for argumentation theory by applying van Eemeren and Grootendorst’s pragma-dialectical theory to the analysis of argumentative discourse and the identification of fallacies. In her conclusion, Dimiškovska emphasizes the need to elaborate the theorizing concerning non-analytical reasoning by replacing a purely descriptive theory by a theory that also includes the normative dimension.¹¹⁵

As is shown in Dimiškovska (2009), the (re)introduction of argumentation theory involves a radical return to the resources of natural language and the primacy of the dialectical perspective over the analytical perspective. Dimiškovska responds to the question of how in argumentative discourse the participants can prevent inadequate argumentative acting from being effective by reacting to subversive

¹¹³ In Macedonia an Albanian translation was published of van Eemeren, Grootendorst and Snoeck Henkemans (2002a) (van Eemeren, Grootendorst & Snoeck Henkemans, 2006a).

¹¹⁴ See also Dimiškovska Trajanoska (2006).

¹¹⁵ The research just discussed is continued in the field of legal reasoning. See Dimiškovska Trajanoska (2010) and Dimiškovska (2011).

uses of argumentative techniques by the other party that go against “the canons of rationality.” She discusses four different “strategies” that can be used in different contexts, on different communicative levels, and with different effects. In this discussion she pays special attention to the relationship between normative and descriptive aspects of the strategies.

Other research activities related to argumentation theory at Ss Cyril and Methodius University are employed at the Institute of Classical Studies with regard to rhetoric and at the Institute of Pedagogy and the Institute of Psychology with regard to critical thinking.¹¹⁶ In the early twenty-first century, the South East European University in Tetovo has also become actively engaged in argumentation theory, due to the work of Vesel Memedi, who was a lecturer at this university and is presently a professor at the State University of Tetovo. Memedi is interested in the problem of resolving “deep disagreement.” In Memedi (2007), he argues with the help of a Macedonian case study that the concept of a “third party” can be of help in explaining at least some of the cases of deep disagreement.

Research in argumentation theory tends to concentrate on analyzing argumentative discourse between two parties, but in certain cases a third party is involved as well. Just as the parties in debate tournaments do not try to persuade each other but the judge or the referee, in a court of law the lawyers on both sides do not try to persuade each other but the judge or the jury. According to Memedi (2007), the same can be said about certain ethnic conflicts, where the parties cannot persuade each other but try to convince a third-party audience. By means of a pragmatic-dialectical analysis of the strategic maneuvering by Macedonian-language and Albanian-language newspapers regarding the armed conflict between these two ethnic groups in 2001, he tests his hypothesis that the two parties were in fact trying to persuade the international community to intervene. In Memedi (2011), he considers exploiting the recently introduced notion of an “attractor” “that can pull inside its gravity both sides” in dealing with intractable conflicts (p. 1264), so that a powerful attractor, such as intervention by the international community, can be used in analyzing and explaining the management of the Macedonian conflict.

12.12 Argumentation Studies in Russia and Other Parts of the Former USSR

The study of argumentation in Russia and other parts of the former USSR is not characterized by compliance with a unifying paradigm. There is a clear interest in argumentation theory, but the views about what the subject matter of the discipline should be differ, just as there is no unanimity regarding its main problems or prospective developments. Argumentation is approached from a variety of angles. The main theoretical traditions are philosophical, logical, cognitive,

¹¹⁶ See Miovska-Spaseva and Ačkovska-Leškovska (2010) for an effort to develop innovative techniques of critical thinking that can be applied at all educational levels.

pragma-dialectical, rhetorical, or a combination of some of these. Different schools can be distinguished, but there is in fact a considerable amount of overlap between them. In sketching the state of the art, we shall first pay attention to the historical background of the study of argumentation in the Soviet Union and then discuss more recent developments. We will do so by giving an overview of the various kinds of approaches to argumentation theory in Russia and other countries that were part of the USSR.

Historically, Russian argumentation studies started as part of the logical research tradition. Some works, however, reached beyond the confines of this framework. The famous Russian logician Sergey Povarnin, for instance, discussed in his seminal work *Iskusstvo spora: O teorii i praktike spora* [The art of argument: On the theory and practice of arguing], next to logical aspects, also communicative and psychological aspects of arguing (Povarnin 1923). Povarnin developed a classification of disputes, examined arguing techniques of proponents and opponents, and classified fallacies. His work is still on the reading list of argumentation students looking for practical aids. A more articulated theoretical interest in argumentation theory however was not generated in the Soviet Union until the second part of the twentieth century, when some studies of prominent Western argumentation theorists, such as Walton, and van Eemeren and Grootendorst, had been translated into Russian.¹¹⁷

In the 1970s, the interest in the study of argumentation in the Soviet Union was first stimulated from Armenia by the philosopher Georg Brutian, who started then a center of argumentation research at the University of Yerevan.¹¹⁸ Brutian thus revived an old Armenian tradition, going back to David the Invincible in the fifth and sixth century. He offered a theoretical basis for the approach on which the new stream of argumentation research was to be built. His efforts have resulted in the creation of the Yerevan School of Argumentation. At present, this school has branched out to scholars in Russia, Belarus, and various other countries.

Brutian and his collaborators concentrated in the first place on philosophical argumentation, but they also published about specific problems in the theory of argumentation and about argumentation analysis. They view argumentation as aimed at transforming the opponent into a co-participant in the realization of the proponent's goal. The main characteristic of their approach is that it is synthetic, combining insights from philosophy, logic, rhetoric, discourse analysis, and other disciplines. The Yerevan School of Argumentation has been very active in organizing international conferences and educating young researchers from all over the Soviet Union. After the first All-Union symposium on argumentation had taken place in Yerevan in 1984, such conferences have been held on a regular

¹¹⁷ Walton's study of ad hominem arguments (1998a) was translated into Russian (2002a). Russian translations of van Eemeren and Grootendorst (1984, 1992a) and van Eemeren, Grootendorst and Snoeck Henkemans (2002a) were also published (1994c, 1992b, 2002b, respectively).

¹¹⁸ As his Russian colleague Alekseev (1991) states, "The development of the investigation of argumentation in the Soviet Union is connected first of all with Brutian's name" (p. 4).

basis and their proceedings were always published.¹¹⁹ From 1997 to 2001, Brutian also published the journal *Armenian Mind* and from 2003 onwards *News and Views*.¹²⁰

In his publications on argumentation theory (e.g., G. Brutian 1991, 1992, 1998), Professor Brutian has displayed a broad interest in a great many topics, varying from the history of the study of argumentation and the use of dialectic and rhetoric to the typology of argumentation and the specific characteristics of philosophical argumentation.¹²¹ Other members of the Yerevan School include Hasmik Hovhannisian, Robert Djidjian, and Lilit Brutian. Hovhannisian investigated the problems of argumentation that David the Invincible was dealing with and described the history and current concerns of the Yerevan School (Hovhannisian 2006). Djidjian concentrated on the role of argumentation in scientific discovery, in medical argumentation, and in other fields of knowledge, but he also discussed the interrelation of argumentation theory and “transformational logic” (Djidjian 1992). Lilit Brutian’s main focus is the linguistic dimension of argumentation. She published essays on the analysis of explicit and partially explicit types of argumentative discourse and suggested a typological classification of argumentative discourse (e.g., L. Brutian 1991, 2003, 2007, 2011).¹²²

Currently, two philosophical traditions can be distinguished in Russia, the one located in Moscow, the other in St. Petersburg. In Moscow, the leading theorists are Andrey Alekseev, Irina Gerasimova, and Alexander Ivin of the Philosophy Institute of the Russian Academy of Sciences and Yury Ivlev of the department of logic at Moscow State University. In St. Petersburg, the most prominent scholars are Anatoliy Migunov and Elena Lisanyuk of the department of logic of St. Petersburg State University.¹²³ There is also a research group in argumentation at the department of philosophy of the Immanuel Kant Baltic Federal University in Kaliningrad, which was founded around 2000 by the late Vladimir Briushinkin. In addition, the activities of Viktor Tchouechov of the philosophy department of the Public Administration Academy in Minsk, Belarus, deserve to be mentioned.

¹¹⁹ The proceedings of the first symposium, *Problems of philosophical argumentation*, were published by G. Brutian and Narsky (1986). They see “argumentology” as a special branch of philosophical study.

¹²⁰ In 2004 an Armenian translation was published of van Eemeren, Grootendorst and Snoeck Henkemans (2002a).

¹²¹ For his views on the language of argumentation, see Brutian and Markarian (1991).

¹²² Other members of the Yerevan School are Edvard Atayan, Igor Zaslavsky, Hrachik Shakarian, Hamlet Gevorkian, Alexander Manassian, Edvard B. Markarian, Edvard S. Markarian, Henri Grigorian, Suren Hovhannisian, Hovhannes Hovhannisian, Mkrtich Avagian, Arthur Avanesian, and Anna Amirkhanian.

¹²³ Between 1999 and 2002 the department of logic of St. Petersburg State University and the department of speech communication, argumentation theory and rhetoric of the University of Amsterdam published a joint online journal, *Argumentation. Interpretation. Rhetoric*, co-edited by Migunov and van Eemeren.

The Moscow scholars concentrate on the ways of reasoning displayed in argumentation, which should, in their view, always be logically correct. Alexander Ivin's (1997) textbook *Osnovy teorii argumentatsii* [The basics of argumentation theory], which is the first of its kind in Russia, takes as its starting point that the aim of argumentation is to get the audience to accept a thesis, but that this thesis need not necessarily be true. According to Ivin, argumentation theory has as its main goal to study the various discursive ways that enable speakers to influence their audience, even when they defend theses that are in fact false. Because of the different kinds of backing they require, Ivin not only distinguishes between descriptive and evaluative statements, but he also makes a distinction between universal ways of reasoning, which do not depend on the audience, and contextual ways of reasoning, in which the audience that is to be persuaded is taken into consideration.

In St. Petersburg, Anatoliy Migunov examines argumentative discourse from the perspective of logical pragmatics, making also use of the pragma-dialectical theory of argumentation (Migunov 2002, 2004, 2005, 2007a, b, 2009, 2011). Focusing on the interconnection between logic, argumentation theory, and rhetoric, he distinguishes between traditional logical inferences, argumentative inferences in interpersonal communication based on pragma-dialectical principles of argumentation, and rhetorical inferences involving dialogical thought generation and verbalization of ideas. Elena Lisanyuk (2013) pursues a logical-cognitive approach in which argumentation is understood, in a pragma-dialectical vein, as involving two conceptually distinct phases: the mental activity of designing argumentation in a logical and cognitive framework and the speech activity of externalizing the argumentation communicatively in a dialogue or monologue. To conceive a mental design, an arguer has to anticipate the cognitive presumptions of the prospective dialogue partner in relation to the type of argumentation to be advanced. These cognitive presumptions vary in accordance with the distinction between argumentation aimed at justification, aimed at conviction, and aimed at persuasion.¹²⁴

In Kaliningrad, the late Vladimir Briushinkin suggested designing a systematic argumentation model by making use of logical, rhetorical, and cognitive approaches to argumentation (Briushinkin 2000, 2008, 2010). This systematic argumentation model has two distinctive features. The first is that it considers argumentation as a purely conceptual activity taking place inside the mind, whereas the externalization which takes places in verbalizing argumentation is a separate matter. Second, to determine which model of argumentation is to be chosen, research is to be carried out into the intended addressee. The workshops on argumentation started by Briushinkin in Svetlogorsk (formerly Rauschen) in 2000 under the title "Modelling reasoning" have gradually become an important tradition in the field of argumentation theory in the countries of the former USSR; they attract argumentation theorists from Russia, Ukraine, and Belarus.

¹²⁴ Other contributions to argumentation theory by the same author are Lisanyuk (2008, 2009, 2010, 2011).

The Belarusian argumentation theorist Viktor Tchouechov discussed in his dissertation philosophical argumentation in relation to Karl Marx's concept of philosophy. He also conducted comparative studies of Perelman and Olbrechts-Tyteca's new rhetoric and van Eemeren and Grootendorst's pragma-dialectics, on the one hand, and Karl Marx's dialectics, on the other hand. Tchouechov's contributions to argumentation theory further include historical overviews of different kinds of rhetorics. In *Teoretiko-istoricheskie osnovania argumentologii* [Theoretical-historical foundations of argumentology], Tchouechov (1993) differentiates three methodological directions in historical philosophies of argumentation: argumentation from *logos* in ancient Greece, argumentation from authority in ancient India, and argumentation from *ethos* in ancient China. In considering paradigms of argumentology, he proposed to distinguish along the following four dimensions between the various approaches: formal/informal/nonformal logics; argumentative/expressive rhetorics; hermeneutics/para-hermeneutics; and monological/dialogical/dialectical (see also Tchouechov 2011).¹²⁵

The studies of argumentation in Russia and other parts of the former Soviet Union which start from a linguistic angle concentrate on specific aspects of argumentative discourse. These studies are conducted from rhetorical and pragma-dialectical perspectives. Again, a distinction can be made between a Moscow School and a St. Petersburg School, but there are also contributions from others. A prominent theorist from the Moscow School in linguistic argumentation studies is Anatoly Baranov. In his doctoral dissertation, *Linguisticheskay teoriya argumentatsii (kognitivny podhod)* [Linguistic theory of argumentation: A cognitive approach], Baranov views argumentation as "a complex of verbally performed cognitive procedures of knowledge processing" that lead to changes in the recipient's world picture and influences the process of decision-making (1990, p. 41). Baranov distinguishes between four types of argumentation: logical, emotional, dialectical, and "generative" argumentation.

Prominent representatives of the St. Petersburg School in linguistic argumentation studies are the late Ludmila Chakhoyan, Tatyana Tretyakova, Vadim Golubev, Kira Goudkova, and Tatyana Ivanova. Initially, the group was led by Chakhoyan, whose views on argumentation were influenced by pragma-dialectics. She supervised the doctoral dissertations of Golubev and Goudkova. In their argumentation research, Tretyakova, Golubev, Goudkova, and Ivanova deal with a variety of language-related topics, including the argumentation structures and argument schemes used in media discourse,¹²⁶ the types of argumentation

¹²⁵ Other argumentation studies from Belarus are Yaskevich (1993, 1999, 2003, 2007). These studies deal, among other things, with argumentation in the context of science. See also Tchouechov (1999).

¹²⁶ See Maslennikova and Tretyakova (2003). For a study of text genre and argumentation structure by a scholar formerly from St. Petersburg, see Dolinina (1992). Dolinina (2007) concentrates on linguistic aspects of argumentative refusals to comply with directives and imperatives.

and linguistic devices arguers use,¹²⁷ and verbal manipulation by pseudo-argumentation.¹²⁸ In some cases, they carry out joint projects (e.g., Goudkova and Tretyakova 2011).

Vadim Golubev (2001, 2002a, b) uses a logico-pragma-stylistic perspective in identifying and explaining fallacies. His analysis is based on the assumption that in argumentation in natural language there is a strong interdependence between the logical aspects examined in logic and the pragma-stylistic aspects examined in linguistics. Golubev identifies three major appeals that are made in a communicative strategy: to the mind of the recipients, to their emotions, and to their aesthetic feelings. The maximum persuasive effect can be achieved by using all three kinds of appeals, so that the rational appeal is reinforced by the emotional and the aesthetic appeals. Fallacies occur when reason is supplanted by emotional and aesthetic appeals.¹²⁹ Later Golubev concentrated his research interests on political argumentation, in particular on the issue of terrorism in public debate in Russia. In Golubev (2007), he analyzed President Putin's address to the nation in the wake of the Beslan terrorist attack, on 4 September 2004, to examine how the Russian leader used the problem of terrorism in furthering his political goals. In this way, the terrorism debate is viewed in the wider context of the democracy and governance debate between the Russian President and the liberal opposition.

Kira Goudkova (2009) examines in *Kognitivno-pragmatichesky analiz argumentatsii v analiticheskoy gazetnoy statye* [Cognitive-pragmatical analysis of argumentation of the analytical newspaper article] the use of argumentation in British newspapers. Her starting point is that the framework within which argumentation is built and structured cognitively is defined by binary oppositions. In agreement with the pragma-dialectical view, she recognizes that argumentation is both a process of putting forward arguments and a result of this process. In terms of the textual result, a distinction can be made between a type of argumentation composition that is progressive (first, the thesis and then the supporting arguments) and a type of argumentation composition that is regressive (first, the supporting arguments and then the thesis). In terms of the discourse process, oppositions apply such as thesis and antithesis, proponent and opponent, and argument and counterargument. Such oppositions determine, according to Goudkova, the argumentative vector of the arguer's reasoning, especially in the case of conflicting systems of belief.

Elsewhere in Russia, Lev Vasilyev (also spelled Va(s)siliev) of Kaluga State University focuses on the convergence of logical and linguistic aspects of argumentation.¹³⁰ In Vasiliev (1994), the founder of the Kaluga School of Linguistic

¹²⁷ See, for instance, Smirnova (2007) on reported speech in newspaper discourse.

¹²⁸ See Sentenberg and Karasic (1993).

¹²⁹ See also Golubev (1999).

¹³⁰ At Udmurt State University, Kiseliyova defended in 2006 a doctoral dissertation on variability of verbal reactions in argumentative discourse (Kiseliyova 2006).

Argumentology proposed a method for tactical argument analysis and enthymeme reconstruction which makes use of an Aristotle-based syllogistic logic (see also Vassiliev 2003).¹³¹ Vasilyev advocates a multi-level semio-argumentative approach to analyzing comprehension instruments of argumentative discourse in which the starting point is that the principal linguistic unit in which argumentation manifests itself, the Argumentative Move, has the nature of a sign (Vasilyev 2007). He supervised a series of doctoral dissertations on various types of written texts with the form of a monologue.¹³²

In Belarus, Alena Vasilyeva of Minsk State Linguistic University concentrates on argumentation in the context of dispute mediation. Making use of insights from pragma-dialectics and the study of conversational argument by Jackson and Jacobs, she examines, for example, how participants in dispute mediation manage to shape the disagreement space and how they make use of the resources of the disagreement space to construct the process of deliberation (Vasilyeva 2011). In Vasilyeva (2012), she shows what is made arguable and how the strategies and resources that can be used in the argumentation are constrained by demands of the interaction process, such as face protection, and the institutional demands of the communicative activity type in which the argumentative exchange takes place. The mediator proves to play an active part in shaping a specific disagreement space and controls to some extent what can become arguable.

Besides these contributions to the study of argumentation from Russia and other parts of the former USSR,¹³³ there is also an ongoing rhetorical tradition of argumentation research based on Aristotle and on Perelman and Olbrechts-Tyteca's new rhetoric. The most important theoreticians are Yury Rozhdestvensky and Evgeny Kluev. *Prinzipy sovremennoy ritoriki* [The principles of modern rhetoric] by Rozhdestvensky (2000) and *Ritorika: Inventsiya, dispozitsiya, elocutsiya* [Rhetoric: Invention, disposition, elocution] by Kluev (1999) are generally considered to be the main handbooks for specialists working in this tradition. Their focus is mainly on persuasive strategies in texts from the media and on the principles of constructing persuasive texts.

¹³¹ See also Vassiliev (1999).

¹³² The doctoral dissertations supervised by Vasiliev deal with strategies and tactics in argumentative discourse (Oshchepkova 2004), mocking (Volkova 2005), refutation (Puckova 2006), presidential address (Guseva 2006), advertisement (Kalashnikova 2007), deliberation (Vasilyanova 2007), informative speech (Kasyanova 2008), conflict at school (Ruchkina 2009), appeals and complaints (Cherkasskaya 2009), political public address (Sukhareva 2010), allegorical phrasal units (Saltykova 2011), cognitive aspects (Besedina 2011), and bureaucratic runaround (Puckova 2011).

¹³³ At the Eurasian National University in Kazakhstan, too, a start has been made with argumentation research from a linguistic perspective. In collaboration with argumentation theorists of the University of Lugano, Serikkul Satenova supervised the doctoral dissertations of Lyazzat Kimanova and Diana Akizhanova.

12.13 Argumentation Studies in Spanish-Speaking Areas

In the Spanish-speaking world, the interest in argumentation theory has increased considerably in the first decade of the twenty-first century. Various research groups concentrating on the study of argumentation have come into being, academic conferences have been organized, and the teaching programs of a number of universities have been enriched with courses devoted to argumentation. This development did not only take place in Spain but also – and even more strikingly – in Chile, Argentina, Colombia, and some other Latin American countries.¹³⁴ The growing interest is for a large part motivated by the practical relevance of argumentation, which manifests itself in the academic activities in a strong emphasis on the study of argumentative competence and skills and the intricacies of the use of argumentation in the legal domain and other institutional contexts.

Unfortunately, the great rhetorical tradition going back to the Spanish Golden Age, which shares some important characteristics with the Renaissance traditions in Italy, England, and the Netherlands (Alburquerque 1995), was not systematically continued.¹³⁵ Nevertheless, the relationship between rhetoric and argumentation and the relationship between argumentation and logic were already a topic of reflection, albeit by somewhat isolated scholars, before the field started to expand. Toulmin's philosophical views were studied, just as Perelman's approach to legal reasoning,¹³⁶ and the importance of informal logic for teaching philosophy, linguistics, and communication was considered. The Uruguayan philosopher Carlos Vaz Ferreira (1872–1958), for one, showed in his early *Lógica viva* [Living logic] (Vaz Ferreira 1945), stemming from 1910, why it is necessary to examine the fallacies.

Although the recent invigoration of argumentation studies in Spanish-speaking countries has not yet led to a great many fundamental theoretical innovations, it is clear that the required background has been created for systematic theoretical reflection and fruitful mutual collaboration. The present academic infrastructure of the field includes regular conferences and seminars devoted to argumentation theory, book series which publish studies on argumentation by Hispanic scholars and translations of works written by other prominent scholars in the field, and even

¹³⁴ As far as we are aware, no argumentation research is going on in Bolivia, Paraguay, and Peru, and only a very limited amount of work is done in Venezuela and Ecuador. In Venezuela, at the Experimental Pedagogical University Libertador in Caracas, the linguist Thays Adrian (2011) relates argumentation theory to political discourse. Like a great many of their Latin American colleagues, Natalie Álvarez and Iraidia Sánchez (2001) focus on measuring argumentative skills of secondary school students.

¹³⁵ The rhetoricians who gave shape to this tradition are Antonio de Nebrija, Miguel de Salinas, Alfonso García Matamoros, Cipriano Suárez, Martín de Segura, and Juan de Guzmán. The Valencian rhetorician Juan Luis Vives (1492–1540) also deserves to be mentioned. Baltasar Gracián (1601–1658) provided a rhetorical synthesis of the renaissance spirit (Kennedy 1999).

¹³⁶ A Spanish translation of Feteris (1999), *Fundamentals of Legal Argumentation*, was published in 2007.

an Institute of Argumentation at the Faculty of Law of the University of Chile, led by Rodrigo Valenzuela, and a Centre for the Study of Argumentation and Reasoning (CEAR) at the University of Diego Portales in Santiago de Chile. The last institution has its own academic journal, *Cogency*, edited by Claudio Fuentes and Cristián Santibáñez. Against this background, compared with the situation in the past, communication and exchanges of views between argumentation scholars from different Hispanic countries are now much easier to realize.

In Spain, argumentation theory was strongly promoted by the philosopher Luis Vega Reñón, starting already in the 1990s (see Vega 2005). Approaching argumentation primarily from a logical perspective, Vega not only published on the topic but also stimulated his students at the Spanish Open University UNED (Universidad Nacional de Educación a Distancia) to write theses and doctoral dissertations about problems in argumentation theory. From Madrid, he directed three comprehensive research projects, in which he also included scholars from other parts of Spain and from South America and Mexico.¹³⁷ As a result, in 2011, under the supervision of Vega and Paula Olmos, the first *Compendio de lógica, argumentación y retórica* [Compendium of logic, argumentation and rhetoric] was published (Vega and Olmos 2011), which had a second edition already 1 year later.¹³⁸ In 2010, Vega founded an online journal on argumentation, *Revista Iberoamericana de Argumentación* (RIA) [Ibero-American journal of argumentation].¹³⁹ He was also instrumental in the publication of a monograph by María G. Navarro (2009) about argumentation and interpretation, *Interpretar y Argumentar* [Interpreting and arguing],¹⁴⁰ and a monograph by M. Teresa López de la Vieja (2010) about moral argumentation, *La pendiente resbaladiza* [The slippery-slope fallacy].¹⁴¹

A Spanish argumentation scholar who has published a monograph in English, so that her views are accessible to the argumentation community at large, is Lilian Bermejo-Luque, who is currently affiliated with the University of Granada. In *Giving Reasons*, Bermejo-Luque (2011) presents a linguistic pragmatic approach to argumentation in which she aims to integrate the logical, dialectical, and rhetorical dimensions of argumentation.¹⁴² To achieve this purpose, she develops a model for treating the justificatory and persuasive force of argumentation that is

¹³⁷ Among the participants in the meetings Vega set up to strengthen argumentation theory in the Hispanic academic community were Spanish scholars such as Jose Miguel Saguillo, Huberto Marraud, Cristina Corredor, Jesús Alcolea, José Francisco Álvarez, and Roberto Feltrero but also Latin American scholars such as Gabriela Guevara, Roberto Marafioti, Carlos Pereda, and Cristián Santibáñez.

¹³⁸ For other joint studies by these two authors, see Vega and Olmos (2007) and Olmos and Vega (2011). Another scholar who has promoted the study of argumentation in Spain is Hubert Marraud of the Autonomous University of Madrid (see Marraud 2013).

¹³⁹ See <http://e-spacio.uned.es/revistasuned/index.php/RIA/index>.

¹⁴⁰ See also Navarro (2011).

¹⁴¹ In addition, Vega promoted the publication of a Spanish translation (2013b) of van Eemeren's (2010) pragma-dialectical monograph *Strategic Maneuvering in Argumentative Discourse*.

¹⁴² For her justification of the normative nature of argumentation see Bermejo-Luque (2007).

based on speech act theory. In this endeavor, Bermejo-Luque makes use of several prominent approaches to argumentation: the Toulmin model, pragma-dialectics, the new rhetoric, the ARG model of informal logic, and the epistemic perspective on argumentation. Abandoning the “instrumentalist” conception of goodness of argumentation that is in her view behind these approaches, she offers an alternative by characterizing argumentation as a “second-order speech act complex.” This proposal has led to mixed reactions.¹⁴³

Earlier, at the Basque University of San Sebastian (Donostia), Kepa Korta and his team had already incorporated the study of argumentation in their research program of logic. They included argumentation theory also explicitly in their conferences and colloquiums (see, e.g., Korta and Garmendia 2008). Another disciplinary angle of approach that was chosen at an early stage is linguistics, with a clear focus on Ducrot’s theorizing (see Sect. 9.3 of this volume).¹⁴⁴ Contemporary rhetoric was in Spain also well represented, particularly in connection with Perelman’s views.¹⁴⁵ María Lanzadera, together with Félix García, Sergio Montes, and José Valadés, published in 2007 a compilation of essays, *Argumentación y razonar: Cómo enseñar y evaluar la capacidad de argumentar* [Argumentation and reasoning: How to teach and evaluate the argumentative capacity], in which the state of the art in Spanish argumentation theory was described from the perspective of education. María Josep Cuenca (1995), too, examined argumentation and education. A generally recognized center for the study of legal argumentation in the Hispanic world is the University of Alicante, with Manuel Atienza and Juan Ruiz Manero as the leading scholars and Alexy’s views as the main source of inspiration.¹⁴⁶ Juan García Amado, at the northern University of León, also examines legal argumentation, but his approach is primarily linked with the views of Viehweg and Luhmann. Other Spanish researchers addressed specific topics in argumentation theory. Tomás Miranda (1998, 2002), for example, discussed the argument schemes – a topic later also examined by Begoña Carrascal and Miguel Mori (2011). Visual argumentation in films was studied by Jesús Alcolea Banegas (2007).¹⁴⁷

An important impetus to the study of argumentation in Argentina was given in 2002 by the conference on argumentation organized in Buenos Aires by the prominent discourse analysts María Marta García Negroni and Elvira Narvaja de

¹⁴³ See, e.g., Andone (2012), Biro and Siegel (2011), Freeman (2011b), Hitchcock (2011a), Pinto (2011), and Xie (2012).

¹⁴⁴ In addition, in the 1990s, Portolés and Tordesillas were in Barcelona, members of the Groupe µ, which also published on argumentation.

¹⁴⁵ Sevilla translated Perelman and Olbrechts-Tyteca’s (1958) monograph on the new rhetoric into Spanish (1989). Other names that deserve to be mentioned here are Albadalejo, García Barrientos, García Berrios, and López Eire.

¹⁴⁶ Atienza and Espejo translated Alexy’s (1978) *Theorie der juristischen Argumentation* [A theory of legal argumentation] into Spanish (1989).

¹⁴⁷ Other Spanish contributions to argumentation theory are made, for instance, by Francisco Álvarez (2007) and Urbieta and Carrascal (2007).

Arnoux, where Ducrot presented a keynote speech. Negroni is editor of the journal *Páginas de Guarda*, which published, besides a great number of essays on style, also papers on argumentation. She is a disciple of Ducrot and has stimulated Argentinian argumentation theory to go into his direction. Narvaja, who shares Negroni's interest in argumentation, leads the master's program of discourse analysis in the Faculty of Philosophy and Letters of the University of Buenos Aires. Argumentation theory is part of this program and students are encouraged to write their master's theses on argumentation, which often means argumentation in political discourse.¹⁴⁸ Although the way in which argumentation is studied in this curriculum is strongly influenced by the French School, there is also room for other approaches.¹⁴⁹

The main protagonist of argumentation studies in Argentina, however, is Roberto Marafioti. He has not only been involved in argumentation theory as an editor of a textbook on semiotics that includes a substantial chapter on argumentation (Marafioti et al. 1997), as an author of a textbook entirely devoted to argumentation theory (Marafioti 2003), and as an author of some essays dealing particularly with political argumentation in parliament (Marafioti 2007; Marafioti et al. 2007) but also as coordinator of a remarkably consistent research group, which includes Bertha Zamudio, Jacqueline Giudice, Leticia Rolando, Nora Muñoz, María Bitonte, and Zelma Dumm.¹⁵⁰

Another scholar doing argumentation research at the University of Buenos Aires is Cecilia Crespo, who examined the role of argumentation in science and more in particular in the ways in which children understand and produce mathematical reasoning (Crespo 2005; Crespo and Farfán 2005).¹⁵¹ The Argentinian philosopher Juan Comesaña is remarkable because he was one of the first South-Americans to engage in informal logic and the study of the fallacies (Comesaña 1998).¹⁵²

More recently, Constanza Padilla has started at the Universidad Nacional de Tucumán in north Argentina, together with her team, to do research concerning argumentative competence in children (Padilla and López 2011) and to apply

¹⁴⁸ Earlier, as editor of *Signo and Seña*, Narvaja already included some papers on argumentation in her journal.

¹⁴⁹ Prominent foreign argumentation theorists are even regularly invited to present their views in guest lectures.

¹⁵⁰ In addition, Marafioti translated van Eemeren, Grootendorst, and Snoeck Henkemans's (2002a) textbook *Argumentation* into Spanish (2006c) and enabled Ana María Vicuña and Celso López to publish their Spanish translation of van Eemeren and Grootendorst's (2004) monograph *A Systematic Theory of Argumentation* (2011).

¹⁵¹ Other argumentation scholars at the University of Buenos Aires are Alicia Carrizo, Alfredo Lescano, Alejandra Reale, and Alejandra Vitale.

¹⁵² Other active Argentinian argumentation scholars are Gustavo Arroyo and Teresita Matienzo of the National University of General Sarmiento; Gustavo Bodanza of the National University del Sur; Bahía Blanca, Mónica Musci, and Andrea Pac of the University of Patagonia Austral; Nidia Piñeiro and Nilda Corral of the National University del Nordeste; and Carlos Oller of the National University La Plata.

argumentation theory to Argentinian social and political discourse, using a combination of pragma-dialectics and Ducrot's approach (Padilla 1997).¹⁵³ Padilla is editor of the journal *Revista del Instituto de Investigaciones Lingüísticas y Literarias Hispanoamericana* [Journal of the Institute of Hispano-American Linguistic and Literary Investigations], which devoted several issues to argumentation theory. In the same vein, Susana Ortega de Hocevar (2003, 2008) at the National University of Cuyo, Mendoza, tried to achieve a better understanding of children's argumentative competence.

Remarkably, at the beginning of the twenty-first century, Chile has become a crucial center of activities in Latin American argumentation theory. In fact, Juan Rivano, Gerardo Álvarez, and Emilio Rivano had prepared the ground for this development in the 1980s and 1990s. Already in the 1980s, Juan Rivano, who was professor of philosophy at the University of Chile, discussed the Toulmin model explaining Toulmin's notion of reasonableness (Rivano 1984). In the 1990s, at the University of Concepción, the linguist Emilio Rivano treated Toulmin's approach in more detail but added some elements from Naess's perspective (Rivano 1999). At the same department, Gerardo Álvarez approached argumentation from the angle of text linguistics (Álvarez 1996). An important step toward an expansion of the Chilean study of argumentation was made at the Catholic University of Chile in Santiago by the philosophers Ana María Vicuña and Celso López. They paved the way to the inclusion of more recent developments in argumentation theory by inviting van Eemeren several times to lecture in Chile and by presenting Spanish translations of the pragma-dialectical monographs *Argumentation, Communication, and Fallacies* (van Eemeren and Grootendorst 1992a), and *A Systematic Theory of Argumentation* (van Eemeren and Grootendorst 2004) (2007 and 2011, respectively). In addition, they applied the theoretical instruments of pragma-dialectics in their own work (e.g., López 2007; Vicuña 2007; López and Vicuña 2011).

The foundation of CEAR at the University of Diego Portales in 2007 created the appropriate context for the further expansion of Chilean argumentation theory. Next to having every 2 years an international argumentation conference and publishing the journal *Cogency*, CEAR supervises bachelor's and master's theses and offers argumentation seminars in Chile and elsewhere in South America, organizes debate tournaments that prepare secondary school teachers and their students for argumentation theory, and sees to the translation of important studies in the field.¹⁵⁴ Several lines of research are being developed at CEAR. So far Santibáñez has published on a variety of topics, varying from a case study about argumentation and metaphor (2010c) to a review of Mercier and Sperber's

¹⁵³ Among her doctoral students were Esther López and María Belén Romano.

¹⁵⁴ Under the supervision of CEAR, a Spanish translation of a compilation of papers by Henry Prakken was prepared (Prakken 2013) and also of Walton and Krabbe's (1995) monograph *Commitment in Dialogue*. *Commitment in Dialogue* (2013), and van Eemeren and Grootendorst's (1984) monograph *Speech Acts in Argumentative Discussions* (2013)

argumentative theory of reasoning (2012a) and an essay on argumentation theory as applied epistemology (2012c).¹⁵⁵

In 2010, the lawyer Rodrigo Valenzuela started the Institute for Argumentation in the faculty of law of the University of Chile, which carries out two lines of work, one focused on rhetoric, led by Valenzuela (2009), and the other focused on pragma-dialectically oriented argumentation, led by Cristóbal Joannon and Constanza Ihnen. In her doctoral dissertation at the University of Amsterdam, Ihnen (2012b) examined the role of pragmatic argumentation in law-making debates in the British parliament. She uses the pragma-dialectical theory of argumentation to develop instruments for the analysis and evaluation of pragmatic argumentation.¹⁵⁶ Subsequently she contextualizes these instruments by taking into consideration the institutional constraints applying to the communicative activity type of parliamentary Second Reading debates in the British parliament. To illustrate their use, she examines pragmatic argumentation put forward by the Labour government in the Second Reading of the Terrorism Bill in 2005. At the University of La Serena, Cristian Noemi also carries out research into legal argumentation, making use of Aristotelian and Perelmanian insights (Noemi 2011). His research on argumentative complexity is partly based on pragma-dialectics.¹⁵⁷

In the south of Chile, at the University of Concepción, Jorge Osorio links argumentation and cognition (Osorio 2006). In Valdivia, at the University of Austral, Cecilia Quintrileo applied pragma-dialectics in analyzing Chilean parliamentary discourse (Quintrileo 2007). A group of Chilean researchers primarily stemming from the Catholic University of Valparaíso concentrates on researching from a linguistic point of view the argumentative competence of children in primary and secondary education. This research is strongly empirical and relates to tests for reading comprehension and debate skills (see N. Crespo 1995; Jelvez 2008; Marinkovich 2000, 2007; Meza 2009; Parodi 2000; Poblete 2003).

Other Spanish-speaking countries in which argumentation has become a topic of research are Colombia, Uruguay, and Mexico. In Colombia, at the University of Valle in Cali, since 2003, María Cristina Martínez Solís has been stimulating the interest in argumentation theory through the UNESCO Chair in Reading and Writing by organizing an international seminar.¹⁵⁸ She invited European argumentation scholars, such as van Eemeren, Plantin, and Amossy, to give seminars in Cali but also South-American colleagues, such as Marafioti and Santibáñez. In her own research, she connects examining argumentation with a dialogical approach to

¹⁵⁵ Among his other papers are Santibáñez (2010a, b, 2012b). See also Fuentes and Kalawski (2007).

¹⁵⁶ See also Ihnen (2012a) and Ihnen and Richardson (2011).

¹⁵⁷ At the University Alberto Hurtado, Flavia Carbonell also examines legal argumentation (Carbonell 2011), just as Jorge Osorio at the University of Concepción (Osorio 2006).

¹⁵⁸ See for a clear token of the connection between European and Latin American scholarship Ducrot (1986).

discourse. In *La construcción del proceso argumentativo en el discurso* [The construction of the argumentative process in discourse] (Martínez 2005), she presents a model of Enunciative Dynamics that integrates from a dialogical perspective three prominent views on argumentation: the Toulmin approach, Perelman's new rhetoric, and van Eemeren's pragma-dialectics (see also Martínez 2006, 2007).

Starting from the model of Enunciative Dynamics, at the University of Valle, the research group GITECLE examines different types of discourses, especially political, administrative, and media discourse, by means of argumentation analysis. At the same university, Adolfo León Gómez had earlier been promoting the new rhetoric by translating Perelman's (1977) *L'empire rhétorique* [The realm of rhetoric] into Spanish (1997). In 1993, Gómez published *Argumentos y falacias* [Arguments and fallacies] (see Gómez 2003). In *Seis lecciones sobre la teoría de la argumentación* [Six lessons on argumentation theory], Gómez (2006) presents an approach to Perelman's thinking which also includes some objections to Perelman's theory. In 2010, Pedro Posada published *Argumentación, teoría y práctica* [Argumentation, theory and practice]. From an educational perspective, Julián de Zubiria (2006) contributed to the field by describing argumentative competence in children.

In Uruguay, the philosophers Miguel Andreoli, Anibal Corti, José Seoane, and others explained their approaches to argumentation at the first international argumentation colloquium organized in 2011 by Carlos Vaz Ferreira at the University of the Republic in Montevideo. Starting from the thinking of Vaz Ferreira, Oscar Sarlo reflected on that occasion about legal argumentation. At the Catholic University of Uruguay, Lilian Bentancur examined argumentation from an educational perspective. Bentancur's (2009) monograph *El desarrollo de la competencia argumentativa* [The development of argumentative competence] describes possible ways of analyzing argumentative competence.

Although a Mexican scholar recently observed that argumentation is in that country a forgotten topic of research (Monzón 2011), and Mexican argumentation research is indeed still thin on the ground, several names should most certainly be mentioned. An early pioneer of argumentation theory is Carlos Pereda of the National Autonomous University of Mexico (UNAM), who started out in 1987 with a collection of essays. His most important contributions are two books published in 1992: *Razón e incertidumbre* [Reason and uncertainty] (Pereda 1992a) and *Vértigos argumentales: Una ética de la disputa* [Argumentative Vertigos: An ethics of dispute] (Pereda 1992b). Next there is Julieta Haidar, who discussed problems of argumentation and operative models (Haidar 2010). Pedro Reygadas of the Autonomous University of San Luis Potosi (UASLP) published, among other things, a book about the art of arguing (Reygadas 2005). Together with Josefina Guzmán, he presented at the 2006 ISSA conference a study of visual schematization in Mexican advertising (Reygadas and Guzman 2007).

At the 2010 ISSA Conference, Ana Laura Nettel discussed argumentation, persuasion, and the enthymeme (Nettel 2011), while Georges Roque concentrated on visual argumentation (Roque 2011b). In 2012, Roque served, together with

Nettel, as guest editor of a special issue of the journal *Argumentation* (Vol. 26, no. 1) on persuasion and argumentation. Next to papers by other international argumentation scholars, this issue includes a contribution by the guest editors in which argumentation is contrasted with manipulation (Nettel and Roque 2012). In this special issue, again, attention is paid to visual argumentation,¹⁵⁹ but there is also a linguistic contribution by Luisa Puig (2012), a scholar from the National Autonomous University of Mexico.

The dominant theme in argumentation studies in Mexico seems to be the development of argumentative skills by children. A lot of attention is paid, in particular in theses and doctoral dissertations, to argumentative competence and the changes that have to be made in the educational system to make this competence develop optimally (e.g., Amestoy 1995; Cárdenas 2005; Cardona 2008; Huerta 2009; Peón 2004; Pineda 2004; Prian 2007). At the same time there is, especially among philosophers, a growing interest in theoretical issues and connections are made with international argumentation scholarship in pragma-dialectics, (non-monotonic) logic, and informal logic. At the University of Guadalajara, in particular, but also in other universities, several scholars are actively engaged in this enterprise (e.g., Leal et al. 2010; Harada 2011).¹⁶⁰

12.14 Argumentation Studies in Portuguese-Speaking Areas

In Portugal, the study of argumentation could only start to develop after 1974, when democracy replaced the repressive authoritarian regime that had ruled the country for over 40 years. In practice, it took until the early 1980s, when the country was about to join the European Community, before the new system had stabilized enough to allow academics to catch up with their colleagues in other Western and European countries. Instead of studying argumentation, however, the emphasis remained initially strongly on rhetoric as a historical, philosophical, and literary discipline. As a consequence, relatively scarce attention was paid to the analysis and evaluation of argumentation. After some scholars had prepared the ground in the 1990s, this situation changed in the beginning of the twenty-first century when argumentation started to become a topic of research in several disciplines, varying from linguistics to communication theory and law. This development culminated in researchers from Portugal joining the international scholarship in the multidisciplinary (and ideally even interdisciplinary) field of argumentation theory proper.

One of the main contributions to the establishment of argumentation studies in Portugal was made by the philosopher Manuel Maria Carrilho of the New University of Lisbon. At the end of the 1980s, he was the advocate of the reform of

¹⁵⁹ See also Roque (2008, 2010, 2011a).

¹⁶⁰ Among them are Natalia Luna and Federico Marulanda. Luna and Leal have also played an important role in stimulating argumentation theory in Mexico by organizing conferences and inviting international argumentation scholars for guest lectures.

philosophy education in Portuguese secondary schools that introduced logic and argumentation in the curriculum. Carrilho approached argumentation from a philosophical and rhetorical perspective inspired by Perelman's new rhetoric and introduced Michel Meyer's "problematology" in Portugal.¹⁶¹ He published several books on rhetoric and argumentation in Portuguese, such as *Verdade, suspeita e argumentação* [Truth, suspicion and argumentation] (Carrilho 1990).¹⁶² In addition, he organized in Lisbon in 1992 an international colloquium about logic and argumentation (Carrilho 1994), coordinated a book series named *Argumentos* [Arguments], and supported Portuguese argumentation researchers who adopted the theoretical framework of the new rhetoric. One of them, Rui Alexandre Grácio, has become one of the most prolific Portuguese authors on rhetoric and argumentation (e.g., Grácio 1993, 1998).¹⁶³

Carrilho's views of rhetoric and argumentation were largely in line with the traditional view of rhetoric as a historical, philosophical, and literary discipline (that is, they do not provide an *argument theory*) and did not have a real impact on the development of argumentation theory in Portugal. The same applies to the views propounded by formal logicians and analytical philosophers related to them, in spite of their success in some important departments of philosophy.¹⁶⁴ In fact, the main impetus to the development of argumentation theory probably came from teachers of argumentation in secondary education, who clearly perceived the relevance of this topic to their students. Together with the authors of textbooks, they urged through their professional organizations for the promotion of argumentation theory at the universities (see Ribeiro and Vicente 2010).

In Portugal, scientific research is organized, independently of teaching, in research units that are, as a rule, institutionally affiliated with one of the sixteen public universities. Because in the first decade of the twenty-first century the research units interested in argumentation research used to be more or less isolated from each other and received an input from different academic disciplines, the development of argumentation theory in Portugal can best be described by taking the disciplinary and institutional backgrounds of the researchers concerned as the point of departure. The coexistence of various disciplinary angles of approach is, in our view, characteristic of the way in which, just as in some other countries, the study of argumentation in Portugal has gradually moved away from the old historical, philosophical, and literary paradigm of rhetoric to a new conception of argumentation theory as a field which incorporates insights from a multiplicity of disciplines and has applications in a variety of areas.

¹⁶¹ Portuguese translations of Perelman and Olbrechts-Tyteca (1958) en Perelman (1977) were published in 1996 and 1992, respectively.

¹⁶² See also Carrilho (1992, 1995) and Carrilho, Meyer, and Timmermans (1999).

¹⁶³ Grácio (with F. Trindade) also translated Perelman's book *L'empire rhétorique* [The realm of rhetoric] into Portuguese (Perelman 1977).

¹⁶⁴ A philosopher worth mentioning is Gil, who influenced, together with his former student Coelho, scholars interested in dealing with argumentation from the perspective of polemics in science. See Gil (1999) and Coelho (1989).

The first disciplinary angle of approach to argumentation in which the paradigm shift manifested itself is linguistics. Here we can also see that the shift has not been completed yet and that the internationalization is largely limited to the inclusion of sources from the Francophone literature. With a few exceptions, it is still mainly studies by Ducrot, Anscombre, Amossy, Plantin, Doury, J.-M. Adams, and their associates that are seriously taken into account. It is nevertheless clear that in studying argumentation and rhetoric from a linguistic perspective, a considerable step forward has been made. This applies, for instance, to the argumentation research conducted at the Centre for Linguistics of the New University of Lisbon, the Centre for General and Applied Linguistics of the University of Coimbra, and the Centre for Humanistic Studies of the University of Minho in Braga.

At the Centre for Linguistics in Lisbon, two research groups in particular focus on problems of argumentation. The first, Grammar and Text, publishes its own *Cadernos WGT (Workshops em Gramática e Texto)* [Notebooks WGT (Workshops in Grammar and Text)] in an electronic version.¹⁶⁵ Its December issue of 2009 was dedicated to argumentation. Starting basically from the Francophone theoretical framework we just mentioned, Rosalice Pinto – the most prominent researcher in Grammar and Text – developed her doctoral dissertation (Pinto 2006) into the monograph *Como argumentar e persuadir? Prática política, jurídica, jornalística* [How to argue and persuade? Political, legal and journalistic practice] (Pinto 2010). Pinto's study focuses on the analysis of texts relating to Portuguese politics at the time of the general elections of 2002. She examines the relationship between the degree of institutionalization of the text genre that is used and the organization, stylistics, and other presentational aspects of the texts in view of persuasiveness. In Pinto's view, the role of persuasiveness compared to demonstration decreases the more a genre is institutionalized.

The second research group, Discursive Interaction, uses a range of theoretical models to examine the discursive structures and strategies in real-life situations, both in spontaneous exchanges and in more institutionalized contexts. Some publications of this group, particularly by Isabel Roboredo Seara, concern rhetoric and argumentation (Seara 2010a, b; Seara and Pinto 2011).

The unit conducting argumentation research at the Centre for General and Applied Linguistics of the University of Coimbra has only one research project, dedicated to synchrony, diachrony, and contact in Portuguese. In the context of this project, Carla Maria Cunha Marques completed in 2010 her doctoral dissertation *A argumentação oral formal em contexto escolar* [The formal oral argumentation in school context]. Again starting from the Francophone theoretical framework we referred to, Marques presents a theoretical and didactic reflection on oral argumentative texts produced in schools (Marques 2010). She also offers a set of guidelines for producing oral argumentative texts in a formal context.

¹⁶⁵ The journal of the Centre for Linguistics, *Estudos linguísticos* [Linguistics studies], addresses also occasionally the topic of argumentation.

At the Centre for Humanistic Studies in Braga, some researchers have made use of the theoretical insights advanced by Adam, Amossy, Anscombre, Ducrot, Plantin, and Doury in examining argumentation in discourse, particularly political discourse. Most pertinent are the studies by Maria Aldina Marques on argumentation in discourse (Marques 2011), argumentative strategies in narrative and political discourse (Marques 2007b), and argumentative strategies in dealing with disagreement in parliament (Marques 2007a).

Communication theory constitutes the second disciplinary angle of approach determining the development of argumentation theory in Portugal. The driving forces are the LabCom of the University of Beira Interior at Covilhã, the Communication and Society Research Centre of the University of Minho in Braga, the department of communication sciences of the New University of Lisbon, and the Centre for Linguistics and Literary Studies of the University of Algarve. Researchers connected with the last two research units, in Lisbon and the Algarve, have contributed by presenting rhetorical studies in which argumentation is taken into account and the old rhetorical paradigm is replaced by an approach from several disciplinary backgrounds (e.g., Cunha 2004; Carvalho and Carvalho 2006).

The LabCom at Covilhã, which is closely connected with the Portuguese Association of Communication Sciences, is the most important research unit in communication in the country. Its multidisciplinary conception of the field includes also research in rhetoric, carried out in particular by the research group Information and Persuasion. One of its research focuses, “rhetoric online,” concentrates on the way in which the means of persuasion described in classical rhetoric are adapted to the various forms of communication that are practiced on the Web (e.g., Serra 2009). The unit has its own electronic journal, *Rhêtorikê*. Some of the publications in the LabCom book series deal with the mediatization of rhetoric in society (e.g., Ferreira and Serra 2011).

Although the Communication and Society Research Centre in Braga has only one research project that focuses on argumentation, Language and Social Interaction, the Centre has been important to the development of the study of argumentation in Portugal. Its journal, *Comunicação e sociedade* [Communication and society], published in 2009 an issue on communication, argumentation, and rhetoric in which, among others, Plantin and Amossy participated. A prominent researcher connected to this group is the already mentioned argumentation theorist Rui Grácio, whose views are close to those of Plantin. In 2011, he completed his doctoral dissertation, *Para uma teoria geral da argumentação: Questões teóricas e aplicações didáticas* [Towards a general argumentation theory: Theoretical questions and didactic applications], in which he discusses various theoretical models of argumentation as well as a conceptual framework for the didactics of teaching argumentation (Grácio 2011).¹⁶⁶

The third disciplinary angle via which argumentation theory has been stimulated in Portugal is the study of law. Some relevant studies have been made by lawyers

¹⁶⁶ For another of his recent publications, see Grácio (2010).

(Gaspar 1998; Silva 2004). In the first decade of the twenty-first century, the Centre for Judicial Studies, which is responsible for the training of all Portuguese lawyers who want to become judges or public prosecutors, has focused on argumentation. So far, however, this focus is not generally shared by the Faculties of Law, although occasionally some university teachers have made important contributions to the literature (e.g., Cunha and Malato 2007; Calheiros 2008). As far as research of legal argumentation is concerned, a notable exception is the New University of Lisbon. Both its ArgLab at the Institute for the Philosophy of Language and its Media and Journalism Research Centre have started to make a real contribution to the theorizing. Among the publications of Hermenegildo Ferreira Borges, who is at the Centre as the coordinator of the postgraduate program Communication, Media and Justice, are the monograph *Vida, razão e justice: Racionalidade argumentativa na motivação judiciária* [Life, reason and justice: Argumentative rationality in judicial motivation] (Borges 2005) and the book chapter “Nova retórica e democratização da justiça” [New rhetoric and democratization of justice] (Borges 2009).

The step from these divergent disciplinary beginnings to a full participation in the multidisciplinary international scholarship in argumentation theory was at the end of the first decade of the twenty-first century made by philosophers from the University of Coimbra and the New University of Lisbon. The Language, Interpretation and Philosophy section of the University of Coimbra created in 2008 a research unit devoted to the teaching of logic and argumentation theory that is coordinated by Henrique Jales Ribeiro. This unit organized within a few years several important international colloquiums to promote the study of argumentation in Portugal: in 2008, “Rhetoric and argumentation in the beginning of the XXIst century” (Ribeiro 2009); in 2011, “Inside arguments: Logic and the study of argumentation” (Ribeiro and Vicente 2010; Ribeiro 2012); in 2012, “Aristotle and contemporary argumentation theory” (Ribeiro 2013); and in 2013, “The role of analogy in argumentative discourse.” In all four colloquiums the most prominent international scholars were invited to participate. In addition, specific seminars were organized. More specifically, all these meetings were aimed at examining the relationship between logic and argumentation theory and determining the role that philosophy can play in argumentation theory as a multidisciplinary (or interdisciplinary) field.¹⁶⁷

At the New University of Lisbon, a spectacular development has taken place. The Institute for the Philosophy of Language started at the end of the first decade of the twenty-first century a research group on argumentation theory, ArgLab, to carry out the research project Argumentation, Communication, and Context. The creation of this research group has made Lisbon one of the international centers of

¹⁶⁷ A doctoral dissertation about the relationship between philosophy, rhetoric, and education was defended at the Faculty of Letters of the University of Coimbra by Vicente (2009). Polónio prepares a doctoral dissertation devoted to Aristotle’s theory of fallacies and its impact on contemporary argumentation theory.

argumentation studies. For the first time, contemporary theories of argumentation were systematically introduced into the Portuguese academia and, at the same time, researchers were attracted who possess the expertise that is required for using these theories to tackle problems in argumentation theory. The theoretical frameworks that are adopted are pragma-dialectics and Walton's dialectical theory. The problems that are tackled pertain primarily to communicative practices in the argumentative contexts of political discussion and legal argumentation.¹⁶⁸

The international group of researchers taking part in the activities of ArgLab includes Fabricio Macagno, Marcin Lewiński, Dima Mohammed, and Giovanni Damele. They carry out research projects that are sponsored by the Portuguese Foundation for Science and Technology. The main project aims at comparing the pragma-dialectical theory and Walton's dialectical argumentation theory by using these two approaches in analyzing and evaluating public argumentative discourse in three different contexts: political and social debates in the virtual public sphere (e.g., Lewiński 2010a, b), legislative debates in the European Parliament (e.g., Mohammed 2013), and legal argumentation in (Portuguese, other European and North American) courts of law (e.g., Damele and Savelka 2011). Special attention is paid to rationality in political argumentation (Lewiński and Mohammed 2013), argumentation in multi-party discussions (e.g., Lewiński 2010a, 2013; Mohammed 2011), the semantics of argument schemes (e.g., Macagno and Walton 2010), and the forms of argument used in legal contexts (e.g., Damele et al. 2011; Damele 2012; Macagno and Walton 2010).

In Brazil, the study of argumentation has been practiced independently from its development in Portugal. Argumentation research in this country has been conducted for some time, but the state of the art in the field is rather diverse. Recently, a remarkable increase has taken place in the number of argumentation studies, particularly among linguists specializing in discourse analysis and legal scholars. There is also a clear interest in applying argumentation theory in education. Basic influences on Brazilian argumentation studies are Toulmin's model of argumentation and, much more strongly, Perelman and Olbrechts-Tyteca's new rhetoric, but some influence from the French linguistic approaches is also noticeable.¹⁶⁹ The following achievements and developments can be reported.

One of the forerunners of argumentation studies in Brazil is Ingedore G. V. Koch of the Instituto de Estudos da Linguagem (IEL) [Institute of language studies] at the State University of Campinas – Unicamp. In *Argumentação e linguagem* [Argumentation and language], a pioneering study of argumentation in Portuguese, which

¹⁶⁸ ArgLab organized several international colloquiums involving international argumentation scholars, such as Aakhus, van Eemeren, Garssen, Hansen, and Walton: "Argumentation in political deliberation" (2011, see Lewiński and Mohammed 2013); "Meaning and arguments in context" (2012); and "Legal argumentation" (2012).

¹⁶⁹ A Portuguese translation of Toulmin's (1958) monograph appeared in 2001 (Toulmin 2001), and Perelman and Olbrechts-Tyteca's (1958) study about the new rhetoric was translated in 1996. In 2008, a Portuguese version of Plantin's (2005) introductory textbook was published.

has already reached its 13th edition, Koch (1984) approaches argumentation from a linguistic point of view. Using the concept of argumentative semantics, she discusses in her study Ducrot's conception of argumentativity. Under the influence of Perelman's new rhetoric, Koch takes the view that the study of argumentation and rhetoric can be seen "almost as synonymous."¹⁷⁰

Currently all major Brazilian universities have research groups in linguistics that study discourse analysis, and some of them include also argumentation in their research. The main center for argumentation studies in Brazil is probably the IEL. Besides Koch, it is home to several other argumentation researchers. One of them is Eni Orlandi, the first scholar practicing discourse analysis in Brazil, who published in 2000 *Análise do discurso, princípios e procedimentos* [Discourse analysis, principles and procedures]. With Suzy Lagazzi-Rodrigues, also at IEL, she has organized several conferences and together they published the book *Discurso e textualidade* [Discourse and textuality] (Orlandi and Lagazzi-Rodrigues 2006).

At the University of São Paulo (USP), discourse analysis has been an important topic of research at the Faculty of Philosophy, Letters and Human Sciences. Eduardo Guimarães (1987), for one, uses in *Texto e argumentação, semântica do acontecimento e história da semântica* [Text and argumentation, semantic of the event and history of semantic] insights from Ducrot to approach argumentation from a semantic angle. At the same university, Lineide Mosca, who coordinates since 2009 the research program "Retórica e argumentação: Exame de procedimentos discursivos" [Rhetoric and argumentation: Analysis of discursive processes], studies argumentation from a rhetorical and discourse-analytical perspective. In 2006, she edited the volume *Discurso, argumentação e produção de sentido* [Discourse, argumentation and making sense], which contains articles written by her graduate students (Mosca 2006). Also at the USP, Norma Discini de Campos (Discini 2008) conducts text and discourse analysis in the perspective of French semiotics, concentrating on discursive stylistics. Diana de Barros (2011) examines the procedures used in intolerant discourse. In 2005, Ademar Ferreira organized at USP an international seminar about the pragma-dialectical theory of argumentation, presented by van Eemeren and Garssen.

At the Federal University of Minas Gerais (UFMG), several research projects on discourse analysis that are closely related to argumentation theory are carried out in the Núcleo de Análise do Discurso [Nucleus for discourse analysis], coordinated by Ida Lucia Machado. Among them are "O ethos ético: O discurso e a ética" [The ethical *ethos*: Ethics and discourse] of Junia Focas (2010), "Análise do discurso: Emoções, ethos e argumentação" [Discourse analysis: Emotions, *ethos* and argumentation] of Wander de Souza and Machado (2008), "Discurso jurídico no tribunal do júri" [Forensic discourse in jury court] of Helcira de Lima (2011), and

¹⁷⁰ In 2010, in Ouro Preto, the first Brazilian conference on rhetoric was held and the Brazilian Society of Rhetoric was founded.

“Discursos sobre trabalhadores” [Discourses on workers] of Antonio de Faria (2001). At the Catholic University of São Paulo (PUC), Ana Dias runs a research group on discourse in the written press.¹⁷¹ She published in 2008 *O discurso da violência – As marcas da oralidade no jornalismo popular* [The discourse of violence – The tokens of violence in popular journalism] (Dias 2008). Also at the PUC, Luiz Ferreira uses pragmatics, aesthetics, and ethics to describe ways of creating cohesion and distance (Ferreira 2010; 2012).

Cláudia Gomes Paiva of the University of Brasília is a researcher who examines the relationship between rhetoric and argumentation (e.g., Paiva 2004). Judith Hoffnagel works at EFPE, the Federal University of Pernambuco on discourse analysis (DA) and textual-discursive studies in social practices (Hoffnagel 2010). Siane Cavalcanti Rodrigues studies discourse analysis and analysis of language practices in teaching (Rodrigues 2010). An entirely different research program has been developed in the department of psychology of this university by Selma Leitão, who develops her own approach to realizing what she considers to be the epistemic benefits of the use of argumentation in educating children. In this endeavor she exploits insights from argumentation theory, cognitive psychology, and the psychology of reasoning (Leitão 2000). The development of argumentative skills is also the topic of research of Clara Maria M. Santos and her colleagues from the Federal University of Rio Grande Do Norte in Natal (e.g., Santos et al. 2003).

Another distinctly prominent research tradition in Brazil concerns legal argumentation. On the one hand, analyses are made of “neo-classical” authors, such as Perelman and Viehweg.¹⁷² On the other hand, original theoretical models are developed to analyze legal decisions or legal discourse in general. At the University of São Paulo, one of the main centers of legal argumentation studies in Brazil, authors such as Tércio Sampaio Ferraz Jr. and Virgílio Afonso da Silva have developed models of discursive rationality aimed at analyzing legal argumentation. The approach of Ferraz Jr. (1997a, b) is based on classical rhetoric and the work of Viehweg. Ferraz adopts a criterion of rationality based on intersubjective justification. Da Silva (2007, 2009, 2011), influenced by Alexy, analyzes the use of legal principles in legal decisions and legal dogmatic. He compares the decisions of the Brazilian supreme federal court with those of the German constitutional court.

A rhetorical approach to legal argumentation from an Aristotelian point of view has been developed by João Maurício Adeodato (2009) at the Universidade Federal de Pernambuco. Adeodato’s work focuses on the role of rhetorical syllogisms (enthymemes) in legal argumentation. Margarida Lacombe Camargo (2010a, b)

¹⁷¹ Among the Ph.D. students engaged in argumentation research at this university is Regina Braz da Silva Santos Rocha, who concentrates on developing from a dialogical perspective methods for teaching argumentative writing skills.

¹⁷² See Monteiro (2006) on Perelman and Roesler (2004) on Viehweg.

of the Federal University of Rio de Janeiro carries out argumentative analyses of “hard cases” of the Brazilian supreme federal court and, more recently, of “public audience” in the same tribunal. Thomas da Rosa Bustamante (2012) of the Federal University of Minas Gerais analyzes, starting from the standard theory of legal argumentation (Alexy, MacCormick), the role of jurisprudence, or “precedents,” in legal discourse. Claudia Roesler coordinates a research group at the University of Brasília which investigates, using Toulmin’s and MacCormick’s models, legal decisions of supreme and high courts in Brazil (Roesler and Senra 2012; Roesler and Tavares da Silva 2012). This work is part of the international project “Observatório Doxa de Argumentação Jurídica para o Mundo Latino” [*Doxa* – Observatory of legal argumentation for the Latin world], which is coordinated by Manuel Atienza of the University of Alicante in Spain.

Several Brazilian scholars are engaged in argumentation research as members of the International Association for the Study of Controversies, led by Marcelo Dascal (see Sect. 12.3 of this volume).¹⁷³ Among them are Ademar Ferreira, Anna Carolina Regner, and Oswaldo Melo Souza Filho. They study controversies not only, and even not primarily, from the perspective of argumentation theory, but also make use of insights from pragmatics, philosophy, more in particular philosophy of science, epistemology, ethics, and philosophy of mind. Of major influence on these projects are the ideas of Dascal, who is both Brazilian and Israeli (e.g., Dascal 1993, 1994, 2005, 2009). The University of the Sinos River Valley (UNISINOS) hosts a research group, Rationality and Controversies, which is coordinated by Regner and is inspired by Dascal’s ideas.

The philosopher Regner (2011) uses Dascal’s (2009) typology of kinds of debates to understand scientific argumentation.¹⁷⁴ She observes that in the scientific debates she examined, presuppositions and the attitude to the opponent’s ideas play an important role in the acceptance of these ideas. In her view, “soft rationality” allows us to understand the argumentation used in these debates, which are neither pure demonstrations nor irrational enterprises. According to Regner, in the argumentation advanced in these debates, both *logos* and *pathos* play a role. Oswaldo Melo Souza Filho (2011) of the Brazilian Air Force Academy at Pirassununga also studies polemical debates, again with the help of Dascal’s typology. His main purpose is to find a way of overcoming deadlocks that do not leave open any prospect to a solution. His proposal is to move from a contentious and confrontational attitude to a dialogical attitude. In proposing this solution, he uses Pyrrhonian skepticism and Buber’s philosophy of dialogue as the two matrices between which we have to maneuver. At the University of São Paulo, Ademar Ferreira has been using pragmatics, rhetoric, and dialectic in examining argumentation and controversies (e.g., Ferreira 2009).

¹⁷³ The electronic journal *Controvérsias* of the department of philosophy of the University of the Sinos River Valley (UNISINOS) focuses exclusively on the study of controversies.

¹⁷⁴ See also Regner (2007, 2009).

12.15 Argumentation Studies in Israel

Besides Dascal and his colleagues working on controversies (see [Sect. 12.3](#) of this volume), and Amossy and her colleagues working on linguistic issues (see [Sect. 9.4](#) of this volume), various other scholars in Israel are interested in examining argumentation. They operate individually. Most of them do not focus on theoretical issues,¹⁷⁵ but on characteristics of argumentation in specific fields, in particular in politics and the media.

Galia Yanoshevsky (2011), for one, explores trust building in scam letters in which the readers are persuaded to transfer money to foreign bank accounts. Yanoshevsky analyzes how the way in which the sender's *ethos* is constructed may lead to the desired action. She claims that the success of scam letters is made possible not only thanks to the creation of a reliable image of the sender of these letters but also by constructing a favorable image of the receiver. The letters are written in such a way that "the reader of the letter may feel pride of being sensitive and benevolent" (p. 2021).

Valeria Pery-Borissov and Yanoshevsky (2011) provide an analysis of meta-discourse in interviews with literary authors. These authors are generally reluctant to participate in interviews. The analysis shows in what way the authors justify their participation in the interviews. Application of interaction analysis to the literary interview for the purpose of exposing the argumentative dimension of the discourse shows that, despite their explicit hostility to the interview as a genre, the authors use the interview to implicitly justify their participation. Using different strategies, they manage to turn the interaction into something that corresponds with their aims or points of view.

Moshe Azar (1995) analyzes argumentative texts in newspapers. Referring to the rhetorical structure theory of Mann and Thompson (1988), he distinguishes five types of argumentative relations: "evidence," "justification," "motivation," "antithesis," and "concession." The evidence relation is the principal and the most powerful argumentative relation found in texts dealing with public issues and debates. Azar claims that the evidence relation frequently interacts with at least one of the less powerful concession and antithesis relations.

Azar (1999) focuses on a specific type of argumentative contrast used in academic argumentative discourse: the refutation of counterarguments, defined as arguments in favor of the standpoint that is the opposite of the writer's own standpoint (p. 19). For his analysis he makes a distinction between "denial" and "concession." Next, two subtypes of denial are discerned: (1) when the denied proposition is replaced by another proposition which serves as a pro-argument or is argumentatively neutral and (2) when the denied proposition is not replaced by

¹⁷⁵ An exception is Inbar (1999), who outlines a conceptual framework for the critical assessment of argumentation which – according to Inbar – differs in some of its core characteristics from conventional approaches: It is resolutely semantic rather than formal; it centers on obligations rather than on beliefs; and its analytical focus is on the contingent necessity of conclusions rather than on persuasiveness or formal validity.

another proposition. The first subtype Azar calls *antithesis* (the proposition that has been denied is the “thesis,” the one replacing it the “antithesis”), the second he calls *objection*. “Concession” is also classified into two subtypes: (1) when the rejection of the opposite standpoint is directly made and in plain words (direct-rejection concession) and (2) when the rejection is only implied (indirect-rejection concession). Azar concludes that counterargument refutation is necessary in establishing differences between proposed and opposed claims in research articles as well as in debating political and social controversies.

Rivka Ribak (1995) recorded the conversations of 50 Jewish and 15 Palestinian families during and following the evening news program on Israeli television viewed daily by most Jews and Palestinians. In analyzing the political discourse of members of these families, she focuses on three distinct – but interrelated – rhetorical moves based on the argument from dilemma: “dilemmatization accepted,” “dilemmatization delegitimated,” and “dilemmatization failed.”

Zohar Livnat (2014), a scholar active in the field of rhetoric of scientific discourse, provides a rhetorical–linguistic analysis of academic “conflict articles” that are part of an actual academic controversy in the field of archaeology. She focuses on the concept of scientific *ethos*. In contexts of conflict, the act of establishing one’s *ethos* and attacking the rival’s *ethos* can become a central issue. Scientific *ethos* is a discursive construction which is reciprocally established and negotiated through various linguistic practices. First-person pronouns, citations, rhetorical questions, irony, and positive and negative evaluations are all resources available to the authors in this endeavor, as well as labeling, the use of quotation marks and punctuation. Scientific norms of disinterestedness and skepticism as well as the values of consistency, simplicity, and fruitfulness are all realized in this argumentative context. Due to the ideological, political, and religious implications of the subject that is treated, emotional neutrality as a scientific value is especially significant.

Menashe Schwed (2003, 2005) investigates the possibility of a theory of visual argumentation. His ideas about visual argumentation are based on Frege’s theory of sense and reference and Goodman’s (1976) theory of art as a symbolic language. He argues that the distinction between the way in which an argument is actually made or communicated and the abstract object of argument is theoretically important for the possibility of visual argument. Schwed starts from the thesis that some images function as arguments intended to persuade the viewers. These images can be constructed in the same way as utterances in a language. They express meaning similar to the way meaning is expressed in other symbolic systems (2005, p. 403).

Schwed discusses the common objection to the notion of visual objects being rather like languages that this idea is based on a particular view of meaning in language: the view that meaning in language is exhausted by reference of denotation. According to Schwed, sense can exist without reference:

An image is not the expression that is performed as a speech act by its creator, but is the vehicle of what the creator expresses; it only imposes indirectly what it expresses. The expressive function is an ulterior function that is assigned to images, but where image, qua images, do not actually exhibit such a function. Their being utterances or vehicles of acts of expression in terms of implications of initial acts of expression. (2005, pp. 406–407)

Schwed concludes that the thesis that, in view of understanding them, images can be assimilated to symbolic systems depends on accepting the conclusion that reference or denotation does not play an important role. The assimilation rests on the concepts of sense in the following way: The specification of the sense of an image is dependent on the bearer of sense, which makes sense a useful notion in interpreting the meaning of images and consequently enables their verbal explication.

12.16 Argumentation Studies in the Arab World

In the Arab world, argumentation theory (Arabic: *الجدال*, al-*ḥijāj*) connects strongly with classical Arabic traditions of logic, rhetoric, and scholastics based on works dating back to the period from the eighth to the eleventh century. As in a great many other parts of the world, the study of argumentation used to be part of the research conducted in other fields, such as philosophy and logic, linguistics and rhetoric, and discourse analysis. As a rule, problems relating to argumentation became a topic of attention because of their relevance to the pursuit of the aims of the disciplines concerned, but occasionally argumentation was also studied for its own sake.¹⁷⁶ In the 1980s, the situation started to change, especially through the impetus given to the study of argumentation by some scholars from Morocco. After the turn of the century, argumentation theory even gradually tends to become a discipline in its own right.

The Moroccan philosophers and linguists who instigated the development of argumentation theory started from the classical Arabic tradition and they aimed at connecting this tradition with the modern revival of the study of argumentation that was taking place in the Western world. Because of the predominantly Francophone orientation of Moroccan academics, the incorporation of the newly developed Western views was in the first place influenced by scholarship in French, with Ducrot's and Perelman and Olbrechts-Tyteca's insights taking pride of place. The two pioneers in the 1980s who set the stage for further developments in Arabic argumentation theory are Mohammed el Omari and Taha Abderrahmane, both from the Faculty of Arts and Humanities of the Mohammed V University in Agdal, Rabat. Their research and teaching stimulated systematic reflection among Arab

¹⁷⁶ In Medieval Muslim scholarship, argumentation was very closely connected to theology. It was known in Arabic as *'ilm al-kalaam*, i.e., the science of speech, or more idiomatically "scholastic theology." This took the form of scholarly debate and argumentation regarding the proper interpretation of Qur'anic verses relating to God's names, attributes, and actions and how these were different from man's names, attributes, and actions. The focus was on how to interpret verses that describe, for example, God speaking to Prophet Moses. The arguments centered around these questions: Does God speak? How can we envisage God's speech? How can we interpret man's freedom to act in light of God's omnibus knowledge and God being the source of all that is and can be done in this world? Baghdad and other Muslim cities witnessed a lot of debates on these issues. A great deal of theological learning involved training on argumentation responding to such questions.

scholars upon the possible links between traditional Arabic insights and modern Western insights.

Mohamed el Omari is a professor emeritus of rhetoric and literary criticism at the Mohammed V University, who worked earlier at the King Saud University in Saudi Arabia and the Sidi Mohamed Ben Abdellah University in Fez, Morocco. In his books on literary criticism he combined the old Arabic tradition with modern linguistics. In addition, he published also on Arabic argumentative discourse, connecting the Arabic rhetorical tradition with insights from Aristotle and modern European approaches to the study of argumentation, in particular from Perelman and Olbrechts-Tyteca's new rhetoric. Omari's work is widely quoted by Arab argumentation scholars, in particular in North Africa. His most significant monograph was published in 1986; it was a theoretical and applied study of Arabic oratory. This study of the rhetoric of argumentative discourse focused in particular on oratory in the first Hijra century.¹⁷⁷

The philosopher Taha Abderrahmane, whose name also appears as Abdurrahman and Abdulrahman, was the second Moroccan protagonist of argumentation theory in the 1980s. His expertise is particularly in logic, philosophy of language, and philosophy of morality. In 1985 he defended at the Sorbonne in Paris a doctoral dissertation in French on argumentation in which he discusses models of argumentation making use of natural deduction. Based on his studies of old Arabic traditions in philosophy, logic, and linguistics, he wrote an important monograph entitled *Fī Uṣūl al-iwār wa Tajdīd 'Ilm al-Kalām* [On the basics of dialogue and the renovation of Islamic scholastics] in which he makes a proposal for a model of human discursive behavior. The model is based on a critical reading of the old Islamic scholastic theology (*'ilm al-kalām*) in view of modern theories of dialogue and discussion (Abderrahmane 1985, 1987). In his later work, however, he concentrated on questions relating to Islam and modernity. The general goal of his project can be described as creating a concept of humanistic ethical modernism on the basis of the values of Islam.

By the beginning of the twenty-first century, the insights of the two pioneers of argumentation theory had become so well known among students and other readers that their influence started to expand outside Morocco. At the same time, the interest in Francophone argumentation theory was extended with the inclusion of insights from Walton, van Eemeren, and informal logic. Although the scholars engaged in the study of argumentation still remain located in departments of linguistics and philosophy, argumentation theory now becomes a specific field of study. In Morocco, but also in Tunisia international workshops and colloquiums were organized dealing specifically with argumentation theory. Meanwhile the research that was carried out continued to concentrate on exploring the links between the Arabic classics and the classical and modern Western tradition and applying the newly acquired insights to modern Arabic discourse.

¹⁷⁷ The Hijra calendar begins in 622 A.D., when the Prophet Muhammed emigrated from Mecca to Medina.

The most outstanding publication of the first decade of the twenty-first century is the five-part volume *Al-ijāḥ: Mafhūmuḥu wa Majālātuḥu* [Argumentation: The concept and the fields]. This comprehensive study, published in 2010, is edited by Hafid Ismaili Alaoui, a young scholar in the department of Arabic of the Ibn Zohr University in Agadir, Morocco. The five volumes include I. Argumentation: definitions and boundaries, II. Argumentation: schools and scholars, III. Argumentation and the dialogue of specializations, IV. Argumentation and practice, and V. Translated texts.¹⁷⁸ Contributions to the study have been made by 58 researchers, stemming from a whole list of Arab countries: Morocco, Tunisia, Algeria, Mauritania, Egypt, Saudi Arabia, Bahrain, and the United Arab Emirates.¹⁷⁹

There are still no academic Arabic journals specializing in argumentation, but a second landmark in the development of argumentation theory in the Arab world is certainly the publication in 2011 of a special issue of the Kuwait-based scientific journal *‘Alam al-Fikr* devoted to the study of argumentation. Usually, Arabic researchers writing on argumentation publish their essays in faculty journals and pan-Arab academic journals. A striking characteristic of the current state of the art is that the contributions to argumentation theory made by Arab researchers remain for the most part local, i.e., limited to the Arabic-speaking world and are inaccessible to the rest of the world because they are published in Arabic.

Among the scholars engaged in argumentation theory are various prolific authors. One of them is Abu Bakr Azzawi (also referred to as Boubker Azzaoui Ihda) of the Cadi Ayyad University in Marrakesh, Morocco. He is a former student of Ducrot, who wrote a doctoral dissertation on pragmatic connectors in Arabic literature (Azzawi 1990). In his research, Azzawi applies Ducrot’s theory to the Arabic language and to discourse in Arabic. He also makes use of insights from Grize and from Perelman and Olbrechts-Tyteca. His later books include *Al-lughā wa al-ijāḥ* [Language and argumentation] (Azzawi 2006) and *Al-Khitāb wa al-ijāḥ* [Discourse and argumentation] (Azzawi 2010). Azzawi’s work is very influential: Particularly in North Africa, serious scholarly studies on argumentation in which it is not quoted are hard to be found.¹⁸⁰

Several other Moroccan scholars are actively engaged in argumentation research. A prominent theorist is Hammou Naqqari of the Mohammed V University in Agdal, Rabat. Naqqari is a former student of Omari. He has a background in logic

¹⁷⁸ Other useful books which appeared around the same time are Amina Al-Dahri’s (2011) *Al-ijāḥ wa Binā’ al-Khitāb* [Argumentation and the structure of discourse], published in Casa Blanca, and *Al-ijāḥ bayna al-Minwāl wa al-Mithāl* [Argumentation between theory and practice] by the young Tunisian Ali Al-Shaba’an (2008).

¹⁷⁹ Two recent book publications of a young Egyptian researcher, Imad Abdullatif (2012a, b) are *Istratijiyyāt al-Iqnā’ wa al-Ta’thīr fī al-Khitāb al-Siyāsī: Khutab al-Ra’īs al-Sadāt Namuthajan* [Persuasion strategies in political discourse: President Sadat’s speeches as a model] and *Al-Balāgha wa Tiwāsul ‘Abr al-Thaqāfāt* [Rhetoric and cross-cultural communication].

¹⁸⁰ In March 2010, a one-day conference was devoted exclusively to Azzawi’s work. The conference took place in the King Abdul-Aziz Al Saud Foundation for Islamic Studies and Human Science in Casablanca, Morocco.

and connects in his work the old Arabic tradition with ancient and modern Western traditions. He edited in 2006 a volume of collected papers on argumentation presented at a conference that he organized: *Al-Taḥājuj. abī'atuh wa Majālātuh wa Waā'ifuh* [Argumentation. Its nature, contexts and functions].

Another Moroccan argumentation theorist is Hafid Ismaili Alaoui, professor in the department of Arabic at Ibn Zohr University in Agadir. He specializes in linguistics and translation and is the coordinator of the research group in Language Communication and Argumentation (E.R.L.C.A). He is editor of the five-volume work on argumentation we already mentioned (Alaoui 2010).

Rachid al Radi, professor of philosophy at the Settāt's private institute of higher education, is a Moroccan scholar who published in 2010 a study about argumentation and the fallacies: *Al-ijāj wa Almughālatah; min al-iwār fī al-'Akl ilā al-'Akl fī al-iwār* [From dialogue to reason to reason in dialogue]. In this study he discusses a variety of perspectives, from Aristotle to Hamblin, Walton, van Eemeren and Grootendorst, and recent contributions from within the Arab world. Radi contributed in 2011 also to the special issue on argumentation published by the Kuwait-based journal of *'Alam al-Fikr*.

Two very active Tunisian argumentation scholars are Hatem Obeid of the University of Kairouan and Hammadi Sammoud of Manouba University. Obeid contributed in 2011 an essay on the subject of the role of emotions in argumentation to the special issue on argumentation of *'Alam al-Fikr* in which he demonstrated a profound knowledge of the argumentation literature published in English. Sammoud is the coordinator of the research unit on discourse analysis at the Manouba University. He edited in 1999 *Ahamm Nathariyyāt al-ijāj fī Attaqālīd al-Gharbiyya min Aristu ilā al-Yawm* [The main theories of argumentation in the western tradition from Aristotle until today]. This volume on argumentation includes studies by members of a research team on rhetoric and argumentation that Sammoud established at the Faculty of Letters of the Manouba University.¹⁸¹

In conclusion of our description of the study of argumentation in the Arab world, we mention some studies by Arab scholars that have been written in English. First, there are two significant essays by Basil Hatim, professor of Arabic Studies at the American University of Sharjah. Hatim is an expert on English-Arabic translation who wrote on argumentation earlier in his career. In Hatim (1990) he presents a model of argumentation in Arabic rhetoric and in Hatim (1991) he discusses the pragmatics of argumentation in Arabic. Although Hatim approaches argumentation from the perspective of a translation scholar, his approach provides interesting insights in the study of argumentation in classical Arabic works of the eighteenth to fifteenth century. Hatim's view of the difference between argumentative practice in Arabic and in English has been influential. He argues that, as a result of the sociopolitical context of discussion in the Arab world, argumentative practice in Arabic is characterized by the use of what he calls "through-argumentation,"

¹⁸¹ Hammadi Sammoud translated together with Abdelkader Mhiri also several French studies on linguistics and discourse analysis into Arabic.

i.e., texts in which there is no reference to any opposite view, as opposed to argumentative practices characterized by the use of counter-argumentation.

Second, there is *Arabic Rhetoric: A Pragmatic Analysis* published in 2006 by Hussein Abdul Raof, a senior lecturer in the department of Arabic and Middle Eastern Studies of the University of Leeds in the United Kingdom. The study provides an excellent exposé of the classical Arabic tradition of rhetorical studies that sheds some light on the study of argumentation in the classical Arabic works.

12.17 Argumentation Studies in Japan

Although the study of argumentation in Japan has not led to any major theoretical innovations, there is certainly a strong and still growing interest in argumentative practices. This interest concentrates in the first place on improving people's argumentative skills in business communication and other professional activities. As a consequence, the study of argumentation in Japan is primarily connected with the training of public speaking and debate, and very much rhetorically oriented. Because the emphasis is on argumentation in contacts with Westerners, this training is usually part of English-language learning. In colleges, it is, outside the official curriculum, organized by the so-called English Speaking Societies (ESSs).

In spite of Morrison's (1972) blunt characterization of Japan as a "rhetorical vacuum,"¹⁸² traditionally rhetorical argumentation has been a major concern of a great many Japanese thinkers, who are not necessarily scholars of argumentation, but politicians, philosophers, and Buddhist monks.¹⁸³ Particularly famous among these thinkers is Kitaro Nishida, who started the Nishida School of Philosophy at Kyoto University. His project "Overcoming Modernity" (*Kindai no chokoku*) is said to have provided a theoretical justification for Japan's wartime imperial ideology.

According to Roichi Okabe (2002), European Christian missionaries – Jesuits from Spain and Portugal – made in the late sixteenth century a failed effort to introduce Western disputation in Japan as an educational practice in religious teaching. Western rhetorical tradition of argument and debate was still more emphatically propagated during the enlightenment of the Meiji era (1868–1912),¹⁸⁴ when serious

¹⁸² According to Morrison, indigenous rhetorical theory is lacking in Japan. See also Becker (1983).

¹⁸³ Among these thinkers are Shotoku Taishi (574–622), Kukai (774–835), Genshin (942–1017), Honen (1133–1212), Jien (1155–1225), Myoe (1173–1232), Shinran (1173–1263), Dogen (1200–1253), Nichiren (1222–1282), Ippen (1239–1289), Kitabatake Chikafusa (1293–1354), Fujiwara Seika (1561–1619), Suzuki Shosan (1579–1655), Hayashi Razan (1583–1657), Nakae Toju (1608–1648), Yamazaki Ansai (1618–1682), Yamaga Sokō (1622–1685), Ito Jinsai (1627–1705), Kaibara Ekken (1630–1713), Ogyū Sorai (1666–1728), Motoori Norinaga (1730–1801), Hirata Atsutane (1776–1843), Nishida Kitaro (1870–1945), Tanabe Hajime (1885–1962), Uehara Senroku (1899–1975), and Nishitani Keiji (1900–1990). See Ishii (1992) and Itaba (1995).

¹⁸⁴ Okabe (1986–1988) identified 145 Japanese books on rhetorical theory, practice, and criticism published during the Meiji era which are to a large extent based on Western rhetoric. He selected eight representative studies written along the lines of classical rhetoric for a more detailed analysis.

attempts were made to modernize Japan in Western ways and the constitution was developed that remained the legal basis of Japanese government until 1945.¹⁸⁵ The Meiji constitution granted significant civil rights to citizens and led to the establishment of the Nation Diet, with a popularly elected parliament.

As Okabe explains in “Japan’s attempted enactments of Western debate practice in the 16th and the 19th centuries,” in particular Yukichi Fukuzawa, the founder of Keio University in Tokyo, undertook strenuous efforts “to enact the practices of Western rhetoric in general and of speech and debate in particular on the rhetorically barren stage of a feudalistic Japan” (p. 281).¹⁸⁶ In 1873, Fukuzawa’s organization *Mita Enzetsukai* (Mita Oratory Association) provided “the first training program in Japanese-language debate and public speaking based on Western rhetorical principles and rules of parliamentary procedure” (Suzuki 1989, p. 17). In Japanese rhetoric the same key components (invention, disposition, style, delivery) and speech genres (forensic, deliberative, epideictic) are distinguished as in Western rhetoric, with basically the same substance. Distinctive features are that the speaker’s *ethos* is generally considered the fundamental constituent of oratory¹⁸⁷ and that the interest concentrates particularly on style.¹⁸⁸ Meiji rhetoricians tended to pay special attention to the difference between *genbun itchi* (integration of spoken and written language) and *genbun betto* (separation of spoken and written language), which can be explained by the fundamental distinction that exists in Japanese between spoken and written language.

According to Okabe, the serious attempts made in the Meiji era to introduce Western principles and practices of speech-making and debating to young Japanese intellectuals resulted eventually in failure (2002, pp. 287–288). One reason was Japan’s political turn toward militarism early in the twentieth century, with the imperialistic government enforcing a stiff control over freedom of speech. Other reasons Okabe mentions are that, psychologically, the foreign rhetorical ideas had not been properly “predigested,” so that the Japanese were not ready to accept them and that, ideologically, Western speech and debate were found to be antithetical to Japanese *nemawashi* (prior consultation of all parties involved) and *sasshi*

¹⁸⁵ According to Okabe (1990, p. 376), “the influence of Western rhetoric in Japan was at its height during the second and third decades of Meiji. The second saw many Japanese translations of Western rhetorical sources, and the third brought a gradual increase in works based on classical rhetoric written by Japanese theorists and practitioners of oratory” (p. 376).

¹⁸⁶ The only difference between speech and debate consisted in the number of participants. Debate was classified into two types: parliamentary debate (as in the National Diet) and oratorical debate (as in the courtroom).

¹⁸⁷ See, e.g., Palczewski (1989) and Suzuki and van Eemeren (2004). According to Okabe (1989), Japanese tend to count seniority, sex, and family background among the constituents of *ethos*, whereas Americans go for intelligence, competence, and character (p. 555).

¹⁸⁸ According to Okabe (1989, p. 557), Japanese style is characterized by implicitness and ambiguity, exemplified by a preference for understatement and hesitation.

(catching on intuitively to the other's feelings).¹⁸⁹ Other potential reasons, mentioned by Carl Becker (1983) of Kyoto University, are that neither law nor business had recognized the importance of argument and that the Japanese language "favored vague rather than blunt denials, and tended to become highly fettered with honorifics" (p. 144).¹⁹⁰ As Takeshi Suzuki (2008) comments, "it is not so much the nature of the Japanese language as it is the socio-cultural atmosphere that emphasizes the hierarchical social structure that had hindered Japanese people from debating in public" (p. 51).

A clear example of the influence tradition can have on public communication in Japan is provided by Suzuki (2012) when he discusses *kotodama*. Of old, it was believed that the use of words can exert a special influence on people, the gods, and the course of events. This belief that a sacred power or spirit dwells in the words of the traditional Japanese language is called *kotodama*. Where *kotodama* rules, there is no freedom to choose words, because using a word is realizing at the same time what it means (*kotoage*), so that extreme care needs to be taken. Only good *kotoage* is to be permitted. This helps explaining why, after the Three Mile Island accident in the United States in 1979 and the Chernobyl accident in the Soviet Union in 1986, Japanese nuclear power authorities maintained that their power plants were safe: Even mentioning the word "risk" was a taboo. Suzuki (2012) critically concludes: "Not only does the influence of *kotodama* still run deep in Japanese society, but Japanese politicians also depend on it as an excuse to postpone critical decision-making or to make inconsistent and provisional decisions" (p. 180).

The wish to overcome the considerable gap between Japanese and Western culture, and to enable Japanese businesspeople and other professionals to communicate effectively in international settings, has been a driving force in the Japanese engagement in argumentation theory, culminating in a pronounced interest in English-language debate. Debate is then viewed as a means of coming to terms with Western thought, language, and behavior. According to Morrison (1972, p. 101), in opposition with the predominantly intuitive and emotional tendencies in the Japanese language, Western rhetoric has as its main strength the compelling quality of logical exposition.¹⁹¹ Okabe (1989) states more precisely that "American logic and rhetoric value step-by-step, chainlike organization," whereas, by contrast,

¹⁸⁹ More generally, it is often observed that Japanese Buddhist culture, influenced by Taoism and Confucian ethics, worked against the development of oratory. In this connection, the hierarchical and static structure of Japanese society, starting already in the family, are also mentioned, together with the preference for cohesion and harmony, supported by ceremony, conformity, and obedience.

¹⁹⁰ Morrison (1972), who is prejudiced against the Japanese language, sees as one of the major stumbling blocks in developing a rhetorical tradition that "a language so deficient makes any kind of argumentation extremely difficult" (pp. 100–101).

¹⁹¹ As Hazen (1982) explained: "The desire to learn English and its linkage with Western forms of logical thinking is coupled with a belief that the Japanese language is 'emotional' and does not express classical forms of Western logic well" (p. 11).

“Japanese logic and rhetoric emphasize the importance of a dotted, point-like method of structuring a discourse” (pp. 553–554). Connecting the study of logic and rhetoric with debate, Mitsugu Iwashita and Yo Konno point out that it is “the paramount goal” of academic debate “to train the student in the tools of argumentation, to train him how to construct logical arguments and to detect weakness or lapses from logical standards in the argumentation of others” (Iwashita and Konno as quoted in Matlon 1978, p. 26; cf. Iwashita 1973).

The pronounced interest in English-language debate has led to a strong American influence on the development of the study of argumentation in Japan, almost exclusively from the field of speech communication.¹⁹² Although already in 1928 the first debate team from the United States – coming from the University of Hawaii – visited Japan, English-language debating did not begin to take off until the early 1950s. In 1950, the first Intercollegiate English-language Debating Contest was held in Tokyo. After that the number of English-language debating tournaments has been steadily increasing.¹⁹³ As part of the Japan–US Exchange Tour, since 1976 American debate teams have been visiting Japan almost every 2 years (Suzuki and Matsumoto 2002, p. 52). In the 1970s, Donald Klopff (1973) could even come to the remarkable conclusion that “next to the United States of America, Japan has the largest amount of debating in the world – and almost all of it is in the English language” (p. 1). Apart from a strong dip in the late 1980s, due to “Americanization” and the adoption of broad topic debate (Suzuki and Matsumoto 2002, p. 58), the English-debate tradition in Japan has been maintained.

Debating tournaments have played an important role in providing oral English communication training for Japanese undergraduates. Because there is no room for this kind of learning activities in the official curriculum, starting in the 1990s, educational debate for college students in Japan has largely been organized by English Speaking Societies (ESSs). These Societies were founded by students who wanted to learn English communicative skills. Most of them have four “sections”: Debate, Discussion, Drama, and Speech. The main reason for students to join the ESS debates is obviously improving their English-speaking capabilities. As Carl Becker observed, additional advantages are that debate is conducted in a living language, has deep subject matter, combines all the important language skills, teaches confidence and assertiveness, and is coached and judged for quality of ideas and effectiveness of communication (Matlon 1978, pp. 26–27). Unfortunately, ESS debaters generally have little faculty supervision, having debate coaches being the exception rather than the rule. As a result, the students are instructed and judged by students from older classes, who have limited experience, or by alumni ESS members. Some former ESS members went on to study communication in the United States and later became university instructors in Japan.

Many Western scholars kept wondering why Japanese people do not debate in their native language. However, as Suzuki and Matsumoto (2002) explain, “English

¹⁹² For an exceptional choice for an informal logical perspective, see Takuzo Konishi (2007).

¹⁹³ See also Masako Suzuki et al. (2011).

debate offers an invaluable context for Japanese people to set themselves free from their cultural constraints” (p. 66) and become acquainted with an adversarial communicative style of decision-making and negotiation (saying “no”) (p. 64). In their view, debate theories are also useful tools to help businesspeople to improve their business communication and management competence. But to conduct successful debate seminars for Japanese businesspeople, certain debate concepts need to be reformulated. First, the concept of “affirmative and negative” is to be replaced by that of “initiator and examiner,” “since the purpose of debate, in business contexts, does not appear to be whether to adopt or negate a specific resolution but to choose the best possible option/plan in a given situation” (Suzuki and Matsumoto 2002, p. 59). Since the 1980s Japanese-language debate has indeed started to develop, Sony, Toyota, and other companies have not only adopted debate as an essential part of the business communication training for those dealing with customers and co-workers at overseas affiliates, but some companies even provide debate lessons to their new employees in Japan. In the 1990s, some enthusiastic teachers also started using debate in Japanese as a means to energize classroom situations in high school, supported to some extent by the Ministry of Education and by mass media.¹⁹⁴

The Japan Debate Association (JDA) – which sponsored the Tokyo Conference on Argumentation in 2000, 2004, 2008, and 2012¹⁹⁵ – is the largest organization for argumentation research in Japan. Some of its most prominent members (e.g., Shigeru Matsumoto) studied communication and rhetoric in the United States¹⁹⁶; other prominent members (e.g., Narahiko Inoue, Yoshiro Yano, and Masako Suzuki) studied communication, argumentation and debate in Japan. The influence of the American communication scholars who were directly or indirectly their teachers on Japanese argumentation scholarship is evident.¹⁹⁷ Their influence also shows clearly in the research interests of the Japanese scholars who studied in the United States. Those who studied at the University of Iowa, for instance, tend to be interested in ideological criticism and critical rhetoric (Aonuma, Kakita), and those

¹⁹⁴ Debeito kousien, for example, one of the largest Japanese-language high school debate tournaments, started in 1996 supported by the newspaper Yomiuri Shimbun.

¹⁹⁵ The establishment of the Tokyo Conference on Argumentation in 2000 is the most striking development in Japanese argumentation theory in recent years. As is testified by its proceedings, this Conference brings together (as keynote speakers and otherwise) argumentation scholars from the East and the West.

¹⁹⁶ Among the Japanese scholars who completed doctoral dissertations in rhetorical/critical analysis in the United States are Miyori Nakazawa (Northwestern University, 1989), Takeshi Suzuki (Northwestern University, 1996), Mitsuhiro Fujimaki (University of Iowa, 2004), Satoru Aonuma (Wayne State University, 2005), and Junya Morooka (University of Pittsburgh, 2006).

¹⁹⁷ George Ziegelmüller taught Naoto Usui and Satoru Aonuma; Thomas Goodnight and David Zarefsky taught Miyori Nakazawa, Takeshi Suzuki, Haruno Yamamaki-Ogasawara, and Hiroko Okuda; Donn Parson and Robert Rowland taught Takeshi Suzuki and Noriko Hasegawa; Bruce Gronbeck and Michael McGee taught Satoru Aonuma and Hideki Kakita; Michael Hazen, who coached a successful American debate team visiting Japan in the 1970s, taught Mitsuhiro Fujimaki, Tomohiro Kanke, and Junya Morooka; more recently, Gordon Mitchell taught Takuzo Konishi and Junya Morooka.

who studied at Northwestern University, in historical and public argumentation studies (Nakazawa, Takeshi Suzuki, Yamamaki-Ogasawara, Okuda). It is striking that all American argumentation theorists who were teaching them are former debate coaches and that most of the Japanese students concerned were already college debaters in Japan.

Let us highlight three important Japanese argumentation scholars in particular, starting with Roichi Okabe, whose work we already mentioned. Okabe, professor emeritus at Nanzan University, has been the most productive scholar in the area of rhetorical argumentation. He has studied Western oratorical traditions and analyzed their influence on Japanese scholarship. In that way he aimed to explain how Western rhetoric has become part of the Japanese tradition (e.g., Okabe 1989, 1990, 2002).

Shigeru Matsumoto of Rikkyo University has been the leading Japanese theorist in the field of argumentation pedagogy since the late 1970s. Having been a champion debater in English college debate tournaments, he went on to study communication at the University of Massachusetts, Amherst, in the United States. After his return to Japan, he became one of the founders and the first president of the Japan Debate Association. For more than 30 years, Matsumoto has promoted intercollegiate and high school debating, both in English and in Japanese, in every possible way.

Takeshi Suzuki of Meiji University has been very active in promoting the case of argumentation theory in Japan in more recent years.¹⁹⁸ He has been the driving force behind the Tokyo Conferences, and in inviting in the first decade of the twenty-first century international argumentation scholars to lecture on government grants basis in Japan.¹⁹⁹ Suzuki has also been a productive scholar, whose research concentrates on discovering universals and discrepancies in cross-cultural argumentation (Suzuki 2001, 2012). With Frans van Eemeren, he examined the strategic maneuvering in the speeches made by Queen Beatrix and Emperor Akihito on the occasion of the Emperor's first state visit to the Netherlands in 2000. In "This painful chapter," a title consisting of a quote from Beatrix, they analyze how the two heads of state utilized their speeches to maneuver strategically to repair the relationship between their countries, which had been badly damaged by Japanese aggression during the Second World War (Suzuki and van Eemeren 2004).

In the American vein of rhetorical analysis, various Japanese scholars have conducted case studies of specific pieces of argumentative discourse. Hiroko Okuda, for instance, concentrated on Prime Minister Mori's controversial "Divine Nation" remarks (Okuda 2007), and later on Obama's rhetorical strategy in "A world without nuclear weapons" (Okuda 2011). Takeshi Suzuki analyzed Prime Minister Koizumi's slogan "Structural reform without sacred cows" (Suzuki 2007)

¹⁹⁸ For one thing, by introducing pragma-dialectics by means of translations to a Japanese readership.

¹⁹⁹ Gordon Mitchell in 2003, Frans van Eemeren in 2004 and 2011, Thomas Hollihan in 2007 and 2012, Thomas Goodnight in 2008, and David Zarefsky in 2009.

and later, with Takayuki Kato, a television debate between Hatoyama and Okada on the leadership of the Democratic Party of Japan (Suzuki and Kato 2011). Tomohiro Kanke discussed Emperor Hirohito's "Declaration of Humanity" (Kanke 2007). In a historical analysis, Kanke offers, together with Junya Morooka, an alternative account of debate practices in Japan during the Meiji and Taisho eras (1868–1926) (Kanke and Morooka 2011).

12.18 Argumentation Studies in China

Since the early 1990s, China is experiencing a remarkable social and cultural change that calls for educational reforms, stressing more liberal attitudes and good citizenship. As a result, in education more emphasis is nowadays placed on teaching critical thinking. Since the study of argumentation provides the teaching of critical thinking with the required academic background, the interest in argumentation theory in China has grown remarkably. It is against this background that recent developments in the study of argumentation in China should be appreciated.

Although ancient China had a strong argumentative tradition, this tradition was not really continued in later times. Current Chinese argumentation studies seem to be influenced in the first place by Western research traditions. Most publications on argumentation are introductory, providing a review of some particular issue in contemporary argumentation theory or giving an exposition of a specific theory. As far as advanced theorizing is concerned, the study of argumentation in China is still at an early stage. Recently, however, some interesting developments have taken place and some research groups have come into being that have started research programs that open up promising prospects for the near future.

Classic Chinese philosophy was, from its beginnings in the spring and autumn period (770–476 B.C.), characterized by a focus on social, moral issues rather than abstract topics. Ancient thinkers had to grapple with a plurality of viewpoints. They engaged critically with each other, trying to defend their own doctrines convincingly while criticizing others, especially in the period of the "Hundred Schools" during the Warring States periods (479–221 B.C.). Their argumentative practices urged them to study argumentation, paying special attention to issues pertaining to the relation between names and reality (Ming/Shi) and between language and meaning, and to the nature, typology, and rules of argumentation and debate.

The need for reflection on prevailing argumentative practices initiated a strong tradition of argumentation studies in ancient China.²⁰⁰ Mohists, in particular, combined a strong faith in argumentation with a keen interest in its study. They valued argumentation (*bian*) as an activity by which we "clarify divisions between right and wrong; examine the guidelines of order and disorder; clarify points of sameness and difference; discern the patterns of names and reality; settle benefit

²⁰⁰ Classic argumentation theory in ancient China is characterized by extensive studies of analogical arguments.

and harm; and resolve uncertainty and doubt” (Xiao Qu). In the Mohist Canons, they presented systematic studies on the forms, procedures, and methods of philosophical argumentation.

Following the decline of the Mohist School, later in history this tradition gradually faded away. When Confucianism became the dominant orthodoxy, the study of argumentation lost its popularity completely. Not until the beginning of the twentieth century, when scholars were searching for a counterpart of Western logic in ancient China, was this tradition rediscovered. This examination of the classic tradition is the subject matter of what is nowadays known as “Chinese Logic.” Its main bodies of research concerning ancient argumentation studies are characterized as “Studies of Names” (Mingxue) and “Studies of Debate” (Bianxue).

A separate tradition that deserves to be mentioned here is the long-lasting scholarship of Buddhist argumentation in China. Buddhism in China has two branches: Tibetan and Chinese. The former has a widespread following in the Tibetan and Mongolian areas, while the latter, also known as Zen, can be found in middle China. Buddhist philosophy includes a system of logic, called *Buddhist logic* or *Hetuvidya*. Viewed from a modern perspective, Hetuvidya is actually a kind of argumentation theory. According to Stcherbatsky (2011a, p. 1), it involves a doctrine on the forms of syllogism (*parārtha-anumāna*), consisting of a major and a minor premise and a conclusion.²⁰¹ This connects Hetuvidya directly with the notion of an argument scheme in modern argumentation theory. The *parārtha-anumāna* – with its five-membered extension, including thesis, reason, example, application, and conclusion – is the core argument scheme in Hetuvidya (Stcherbatsky 2011a, p. 279).

Argumentation has a more prominent place in Tibetan Buddhism than in Chinese Buddhism. According to Rogers (2009, p.13), the Buddhist order of Ge-Luk-pa created a system of education and a curriculum designed to enable students to follow a “path of reasoning,” resulting in a consciousness that has been trained in reasoned analysis to get through to the meaning of religious texts and, eventually, to the true nature of reality. According to Perdue (1992, p. 4), the central aims of Tibetan monastic debate are to defeat misconceptions, to establish correct views, and to meet objections to these views. To reach these ends, the monks make a great effort to engage in debate, diligently trying to learn the words and fully understand the meaning of the Buddhist teaching.

Around the middle of the twentieth century, following the import and enthusiastic reception of modern logic, argumentation studies in China were strongly shaped by the discipline of formal logic. It was not until the 1990s that contemporary Western argumentation theories such as pragma-dialectics and informal logic were introduced in China and argumentation theory gained a broader scope. At present, the study of argumentation is becoming more and more popular in China and

²⁰¹ A famous example of a *parārtha-anumāna* quoted by Stcherbatsky (2011b, p. 110A) is: “Wherever there is no fire, there isn’t smoke either (major premise), But there is smoke here (minor premise), Hence there is fire here (conclusion).”

attracts scholars from various disciplines (philosophy, logic, linguistics, computer science, psychology, etc.).²⁰² There is no noticeable influence of the ancient Chinese argumentation tradition on modern Chinese argumentation studies.

The leading institution in modern Chinese argumentation studies is the Institute of Logic and Cognition at Sun Yat-sen University. This Institute, which houses researchers with a background in philosophy, logic, psychology, and computer science, has a strong tradition of studying argumentation from the perspectives of modern formal logic, cognitive science, and artificial intelligence. Recently, however, it has broadened its interest to informal and pragmatic approaches. In 2010, a rather big research program on argumentation has started that concentrates on studying argumentative practices from the perspectives of anthropology and sociology.

At the Institute of Logic and Cognition of Sun Yat-sen University, a research group, led by Shier Ju, studies argumentative practices in different cultures from anthropological and sociological perspectives.²⁰³ Their research program, based on general theoretical views concerning argumentation developed by Shier Ju, has attracted several younger researchers, some of whom already completed their doctoral dissertations.²⁰⁴ Another research group, led by Qingyin Liang and Minghui Xiong, focuses on the study of legal argumentation. They connect with the theoretical frameworks and tools provided by contemporary Western argumentation theories, such as pragma-dialectics and informal logic, and also make use of insights from rhetoric. An independent, but very productive Chinese argumentation scholar is Hongzhi Wu (Yan'an University), who contributed already in the 1980s to the study of the fallacies.

Both informal logic and pragma-dialectics have had a considerable impact on recent argumentation studies in China.²⁰⁵ The first series of papers introducing the basic issues and methods of informal logic, written by Song Ruan, appeared in 1991 (Ruan 1991–1992a, b, c, d, e). Around 2004, Hongzhi Wu started to give more elaborate introductions of the main theoretical developments in informal logic in a series of papers, resulting eventually in the publication of *An Introduction to Informal Logic* (Wu 2009). Wu provides a comprehensive overview of informal

²⁰² Early Chinese contributions to modern argumentation theory from a linguistic perspective were made by Shi Xu (1995) and Zhuanglin Hu (1995). Shi Xu and Kienpointner (2001) analyzed argumentative strategies in Chinese and Western newspapers concerning the handover of Hong Kong in 1997.

²⁰³ Currently they are concentrating on argumentative practices of Chinese minorities in Tibet, Mongolia, and Sinkiang.

²⁰⁴ Based on reports of ethnographic fieldwork and on research concerning ancient Chinese logic, Ju (2010) argues for the cultural relativity of logic and proposes a concept of argumentation that introduces cultural aspects into argumentation studies.

²⁰⁵ It is worth mentioning that also a great many critical thinking textbooks written by American scholars have been translated into Chinese (e.g., Browne and Keeley (2004), published in 2006; Moore and Parker (2009), published in 2007; and Paul and Elder (2002), published in 2010). In spite of some popularity in pedagogy however, they have had very little impact on argumentation studies.

logic, dealing with virtually all the main sub-areas recognized in informal logic and discussing the major topics that are treated. As far as pragma-dialectics is concerned, so far four studies have been published in Chinese: *Argumentation, Communication, and Fallacies* (van Eemeren and Grootendorst 1992a, translated by Xu-Shi (1991b)); *Critical Discussion* (an earlier version of van Eemeren and Grootendorst 2004, *A Systematic Theory of Argumentation*, translated by Shuxue Zhang (2002)); *Fundamentals of Legal Argumentation* (Feteris 1999, translated by Qi Yuhua (2005)); and *Argumentation: Analysis, Evaluation and Presentation* (van Eemeren et al. 2002a, translated by Minghui Xiong and Yi Zhao (2006b)).

The impact of these Western theories of argumentation manifests itself very clearly in current argumentation research in China. In *Litigational argumentation: A Logical Perspective on Litigation Games*, a recent monograph on legal reasoning by Minghui Xiong (2010), for example, a new framework for the analysis and evaluation of litigational argumentation is presented based on a variety of theoretical resources from contemporary argumentation studies, including theories of formal and informal logic, pragma-dialectics, and formal dialectic. With the help of this integrated framework, Minghui Xiong intends to analyze the litigation games of the suitor, the respondent, and the trier. Another contemporary leading Chinese argumentation theorist, collaborating with Minghui Xiong, is Qingyin Liang. Together the two of them have initiated and extended an argumentative approach to legal logic that is well received and has become very influential in China.²⁰⁶ Rongdong Jin and Yun Xie are two younger Chinese scholars with a keen interest in argumentation studies who have recently joined the international argumentation community. Rongdong Jin is primarily interested in investigating the philosophical foundations of informal logic, while Yun Xie is out to explore the critical dimension of argumentation theory and the dialectical approach to argumentation.

Starting from the need to take pragmatic elements such as context into account in evaluating real arguments, Minghui Xiong and Yi Zhao (2007) take in “A defeasible pragma-dialectical model of argumentation” the view that in argumentation theory another logical model is needed than the classical model of logic. The pragma-dialectical model puts argumentation always in a context of dialogue, but in their view this model can only deal with the defeasibility of real arguments if the basic inference rule of Modus Ponens, or Strict Modus Ponens, is replaced by Defeasible Modus Ponens, so that a Defeasible Pragma-Dialectical Model is constructed. In “Whose Toulmin, and which logic,” Minghui Xiong discusses, together with Yun Xie, Johan van Benthem’s (2009) reservations with regard to Toulmin’s (2003) diagnosis and abandonment of formal logic by discussing “two main misunderstandings of Toulmin’s ideas in van Benthem’s discussions” (Xie and Xiong 2011, p. 2).

In order to clarify an important difference between two prominent approaches to argumentation, Yun Xie (2008) analyzes in “Dialectic within pragma-dialectics and

²⁰⁶ Next to being used in studies of legal logic, informal logic is currently also adopted as a tool for re-interpreting classic Chinese argumentation studies.

informal logic” the conflicting views of dialectic underlying Johnson’s “dialectical tier” and van Eemeren and Grootendorst’s view of dialectic. Whereas in Johnson’s view dialectic represents a particular property of a particular component of his approach, to the pragma-dialecticians dialectic is equivalent with the use of the critical method. Although these two views are theoretically interrelated, they diverge when they are, as happens in the two approaches, incorporated in different pragmatic perspectives, each of them involving a distinct conceptualization of rationality and reasonableness. In the “product-driven” context of the “solo argument construction” of Johnson’s dialectical tier, the dialectical function of critical scrutiny unfolds differently than in the “process-driven” dialogical context of the “duet cooperative discussion” between two parties of pragma-dialectics (Yun Xie 2008, pp. 283–285). In “How critical is the dialectical tier?” Yun Xie tackles the same problem again, this time together with Qingyin Liang and focusing exclusively on Johnson’s view (Liang and Xie 2011). Based on an examination of the similarities and discrepancies between Johnson’s view of the dialectical tier and the critical view of argument, the authors insist that Johnson’s theory and the critical view should be bridged, so that the dialectical tier becomes critical in nature (p. 240).

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Classified Bibliography

Chapter 1 Argumentation theory

[1.1] Argumentation

Berger, F. R. (1977), Eemeren, F. H. van (2010), Eemeren, F. H. van & Grootendorst, R. (2004), Eemeren, F. H. van, Grootendorst, R., Snoeck Henkemans, A. F., Blair, J. A., Johnson, R. H., Krabbe, E. C. W., Plantin, C., Walton, D. N., Willard, C. A., Woods, J. & Zarefsky, D. (1996), Hample, D. (2005), Kennedy, G. (2004), Naess, A. (1966), Sperber, D. (2000), Tindale, C. W. (1999)

[1.2] Descriptive and normative dimension argumentation theory

Barth, E. M. (1972), Barth, E. M. & Krabbe, E. C. W. (1982), Eemeren, F. H. van (1987a, 1987b), Eemeren, F. H. van & Grootendorst, R. (2004), Tindale, C. W. (2004), Toulmin, S. E. (1976)

[1.3] Crucial concepts in argumentation theory

Standpoints

Adler, J. E. & Rips, L. J. (Eds. 2008), Aristotle (1984), Barth, E. M. & Krabbe, E. C. W. (1982), Govier, T. (1992), Habermas, J. (1984), Harman, G. (1986), Kopperschmidt, J. (1989a), O'Keefe, D. J. (2002), Schifffrin, D. (1990), Toulmin, S. E. (2003)

Unexpressed premises

Copi, I. M. (1986), Eemeren, F. H. van (2010), Eemeren, F. H. van & Grootendorst, R. (1992a, 2004), Gerritsen, S. (2001), Govier, T. (1987), Hitchcock, D. L. (1980b), Jackson, S. & Jacobs, S. (1980), Toulmin, S. E. (2003)

Argument schemes

Boethius (1978), Cicero (1949), Eemeren, F. H. van & Grootendorst, R. (1992a), Freeley, A. J. (1993), Garssen, B. (1997, 2001), Hastings, A. C. (1962), Kienpointner, M. (1992), Perelman, C. & Olbrechts-Tyteca, L. (1969), Schellens, P. J. (1985),

Walton, D. N. (1996a), Walton, D. N., Reed, C. & Macagno, F. (2008), Whately, R. (1963)

Argumentation structure

Beardsley, M. C. (1950b), Campbell, G. (1991), Eemeren, F. H. van & Grootendorst, R. (1992a), Fisher, A. (2004), Freeman, J. B. (1991), Govier, T. (1992), Pinto, R. C. & Blair, J. A. (1993), Snoeck Henkemans, A. F. (1992, 2001), Thomas, S. N. (1986), Toulmin, S. E. (2003), Walton, D. N. (1996a), Whately, R. (1963), Wigmore, J. H. (1931)

Fallacies

Aristotle (1984), Barth, E. M. & Krabbe, E. C. W. (1982), Biro, J. & Siegel, H. (1992, 1995, 2006a), Eemeren, F. H. van (2001, 2010), Eemeren, F. H. van & Grootendorst, R. (1992a), Eemeren, F. H. van, Grootendorst, R., Jackson, S. & Jacobs, S. (2010), Finocchiaro, M. A. (1987), Hamblin, C. L. (1970), Hansen, H. V. & Pinto, R. C. (Eds. 1995), Hintikka, J. (1987), Locke, J. (1961), Walton, D. N. (1987, 1991a, 1992c, 1992d), Walton, D. N. & Krabbe, E. C. W. (1995), Woods, J. H. (2004), Woods, J. & Walton, D. N. (1989)

Chapter 2 Classical backgrounds

[2.2] Dialectic, logic, and rhetoric

Diogenes Laertius (1925), Gill, M. L. (2012), Isocrates (1929), Kennedy, G. A. (2001), Kneale, W. & Kneale, M. (1962), Kraut, R. (1992), Mendelson, M. (2002), Pernot, L. (2005), Plato (1997), Schiappa, E. (1990), Tindale, C. (2010a), Wagemans, J. H. M. (2009), Yunis, H. (2011)

[2.3] Aristotle's theory of dialectic

Aristot[l]e[les] (1967, 1995, 1997, 1984, 2007, 2012, 2014), Braet, A. C. (2005), Eemeren, F. H. van, Grootendorst, R., Snoeck Henkemans, A. F., Blair, J. A., Johnson, R. H., Krabbe, E. C. W., Plantin, C., Walton, D. N., Willard, C. A., Woods, J. & Zarefsky, D. (1996), Kneale, W. & Kneale, M. (1962), Krabbe, E. C. W. (2009, 2012a), Moraux, P. (1968), Pater, W. A. de (1965, 1968), Ritoók, Z. (1975), Rubinelli, S. (2009), Sainati, V. (1968), Slomkowski, P. (1997), Solmsen, F. (1929), Wagemans, J. H. M. (2009), Włodarczyk, M. (2000), Wolf, S. (2010)

[2.4] Aristotle's theory of fallacies

Aristot[l]e[les] (1995, 2007, 2012, 2013), Botting, D. (2012b), Hamblin, C. L. (1970), Hasper, P. S. (2013), Hintikka, J. (1987, 1997), Krabbe, E. C. W. (1998,

2012a), Nuchelmans, G. (1993), Plato (1997), Schreiber, S. G. (2003), Woods, J. (1993, 1999a), Woods, J. & Hansen, H. V. (1997), Woods, J. & Irvine, A. (2004)

[2.5] Cicero and Boethius on topics

Boethius (1978), Cicero (2006), Rubinelli, S. (2009)

[2.6] Aristotle's syllogistic

Aristotle (1984), Barnes, J. (Ed. 1995), Barnes, J., Schofield, M. & Sorabji, R. (1995), Boger, G. (2004), Corcoran, J. (1972, 1974), Kneale, W. & Kneale, M. (1962), Łukasiewicz, J. (1957), Malink, M. (2006, 2013), Russell, B. (1961), Smith, R. (1995)

[2.7] Stoic logic

Bobzien, S. (1996), Hitchcock, D. L. (2002d, 2005b), Kneale, W. & Kneale, M. (1962), Łukasiewicz, J. (1967), Mates, B. (1961), Nuchelmans, G. (1973), O'Toole, R. R. & Jennings, R. E. (2004), Sextus Empiricus (1933, 1935, 1936, 1949), Wansing, H. (2010)

[2.8] Aristotle's rhetoric

Aristotle (1984), Braet, A. C. (2005, 2007), Kennedy, G. (2001), Plato (1997), Rambourg, C. (2011), Rapp, C. (2002, 2010)

[2.9] Classical rhetoric

Fuhrmann, M. (2008), Kennedy, G. A. (1994, 2001), Lausberg, H. (1998), Martin, J. (1974), Perelman, C. (1982), Pernot, L. (2005), Woerther, F. (2012), Yates, F. A. (1966)

[2.10] The classical heritage

Butterworth, C. E. (1977), Dutilh Novaes, C. (2005), Ebbesen, S. (1981, 1993), Eemeren, F. H. van & Grootendorst, R. (1993), Green-Pedersen, N. J. (1984, 1987), Hamblin, C. L. (1970), Mack, P. (1993, Ed. 1994, 2011), McKeon (1987), Miller, J. M., Prosser, M. H. & Benson, Th. W. (Eds. 1973), Moss, J. D. & Wallace, W. A. (2003), Murphy, J. J. (Ed. 1983, 2001), Ong, W. J. (1958),

Pinborg, J. (1969), Seigel, J. E. (1968), Spade, P. V. (1982), Spranzi, M. (2011), Stump, E. (1982, 1989), Yrjönsuuri, M. (1993, Ed. 2001)

Chapter 3 Post-classical backgrounds

[3.1] Post-classical contributions

Hamblin, C. L. (1970)

[3.2] Logic and argumentation

Berger, F. R. (1977), Beth, E. W. (1955), Bonevac, D. (1987), Mates, B. (1972), Nuchelmans, G. (1976), Wittgenstein, L. (1922)

[3.3] Logical validity

Aristotle (1984), Bolzano, B. (1837, 1972), Copi, I. M. (1961), Dutilh Novaes, C. (2012), Fisher, A. (1988), Frege, G. (1879), Gentzen, G. (1934), Jaśkowski, S. (1934), Kneale, W. & Kneale, M. (1962), Krabbe, E. C. W. (1996), Mates, B. (1972), Pseudo-Scotus (2001), Quine, W. V. (1970), Tarski, A. (2002), Woods, J. & Hudak, B. (1989)

[3.4] Traditional approaches to fallacies

Arnauld, A. & Nicole, P. (1865), Bacon, F. (1975), Copi, I. M. (1961), Eemeren, F. H. van & Grootendorst, R. (1993), Finocchiaro, M. (1974), Hamblin (1970), Johnstone Jr, H. W. (1959), Krabbe, E. C. W. & Walton, D. N. (1994), Locke, J. (1961), Mill, J. S. (1970), Nuchelmans, G. (1993), Perelman, C. & Olbrechts-Tyteca, L. (1958, 1969), Rescher, N. (1964), Schopenhauer (1970), Walton, D. N. (1985, 1998a), Whately, R. (1836)

[3.5] Standard treatment of fallacies

Aristotle (1984, 2012), Copi, I. M. (1972, 1982), Eemeren, F. H. van & Garssen, B. (2010b), Hamblin, C. L. (1970)

[3.6] Hamblin's criticisms of the standard treatment

Beardsley, M. C. (1950a), Biro, J. & Siegel, H. (1992, 2006a), Black, M. (1952), Brinton, A. (1995), Carney, J. D. & Scheer, R. K. (1964), Cohen, M. R. &

Nagel, E. (1964), Copi, I. M. (1953, 1972), Crosswhite, J. (1993), Eemeren, F. H. van & Grootendorst, R. (1989, 1992a, 1993), Fearnside, W. W. & Holther, W. B. (1959), Grootendorst, R. (1987), Gutenplan, S. D. & Tamny, M. (1971), Hamblin, C. L. (1970), Hansen, H. V. (2002b), Johnson, R. H. & Blair, J. A. (1994), Kahane, H. (1969, 1971), Lambert, K. & Ulrich, W. (1980), Mackenzie, J. (2011), Michalos, A. C. (1970), Oesterle, J. A. (1952), Purtil, R. L. (1972), Rescher, N. (1964), Salmon, W. C. (1963), Schipper, E. W. & Schuh, E. (1960), Schopenhauer, A. (1970), Tindale, C. (1999), Walton, D. N. (1987), Woods, J. (1999b)

[3.7] Crawshay-Williams

Crawshay-Williams, R. (1946, 1947, 1948, 1951, 1957, 1968, 1970), Eemeren, F. H. van, Garssen, B. & Meuffels, B. (2009), Eemeren, F. H. van & Grootendorst, R. (1984, 1992a, 2004), Eemeren, F. H. van, Grootendorst, R., Jackson, S. & Jacobs, S. (1993), Eveling, H. S. (1959), Fogelin, R. J. (1985), Haan, G. J. de, Koefoed, G. A. T. & Tombe, A. L. des (1974), Hardin, C. L. (1960), Johnstone Jr, H. W. (1957–1958, 1958–1959), Kneale, W. & Kneale, M. (1962), Lazerowitz, M. (1958–1959), Ogden, C. K. & Richards, I. A. (1949), Rescher, N. (1959), Simmons, E. D. (1959)

[3.8] Næss

Barth, E. M. (1978), Barth, E. M. & Krabbe, E. C. W. (1982), Berk, U. (1979), Bostad, I. (2011), Eemeren, F. H. van (2010), Eemeren, F. H. van, Garssen, B. & Meuffels, B. (2009), Eemeren, F. H. van & Grootendorst, R. (1984, 1992a, 2004), Göttert, K. H. (1978), Gullvåg, I. & Wetlesen, J. (Eds. 1982), Johnstone Jr, H. W. (1968), Krabbe, E. C. W. (1987, 2010), Mates, B. (1967), Næss, A. (1947, 1953, 1966, 1968, 1978, 1992a, 1992b, 1993, 2005), Öhlschläger, G. (1979), Rühl, M. (2001), Simmons, E. D. (1959), Wellman, C. (1971)

[3.9] Barth's dual approach to logical validity

Albert, H. (1969), Barth, E. M. (1972), Barth, E. M. & Krabbe, E. C. W. (1982), Bartley, W. W., III (1984), Lenk, H. (1970), Russell, B. (1956), Toulmin, S. E. (1976)

Chapter 4 Toulmin's model of argumentation

Abelson, R. (1960–1961), Aberdein, A. (2006), Ausín, T. (2006), Beardsley, M. C. (1950a), Berk, U. (1979), Bermejo-Luque, L. (2006), Bird, O. (1959, 1961), Botha, R. P. (1970), Brockriede, W. & Ehninger, D. (1960), Burleson, B. R. (1979), Carnap, R. (1950), Castaneda, H. N. (1960), Collins, J. (1959),

Cooley, J. C. (1959), Cowan, J. L. (1964), Crable, R. E. (1976), Cronkhite, G. (1969), Eemeren, F. H. van, Grootendorst, R. & Kruijer, T. (1984), Ehninger, D. & Brockriede, W. (1963), Eisenberg, A. & Ilardo, J. A. (1980), Ennis, R. H. (2006), Fox, J. & Modgil, S. (2006), Freeman, J. B. (1985, 1988, 1991, 1992, 2006), Goodnight, G. Th. (1982, 1993, 2006), Götttert, K. H. (1978), Gottlieb, G. (1968), Grennan, W. (1997), Grewendorf, G. (1975), Groarke, L. (1992), Habermas, J. (1973, 1981), Hamby, B. (2012), Hample, D. (1977b), Hardin, C. L. (1959), Hastings, A. C. (1962), Healy, P. (1987), Hitchcock, D. L. (2003, 2006), Hitchcock, D. L. & Verheij, B. (Eds. 2006), Huth, L. (1975), Johnson, R. H. (1980), Johnson, R. H. & Blair, J. A. (1980), Johnstone Jr, H. W. (1968), Kienpointner, M. (1983, 1992), King-Farlow, J. (1973), Kneale, W. (1949), Kock, C. (2006), Kopperschmidt, J. (1980, 1989a), Körner, S. (1959), Lo Cascio, V. (1991, 1995, 2003, 2009), Loui, R. P. (2006), Manicas, P. T. (1966), Mason, D. (1961), McPeck, J. (1981, 1990), Metzinger, D. W. (1976), Newell, S. E. & Rieke, R. D. (1986), O'Connor, D. J. (1959), Öhlschläger, G. (1979), Paglieri, F. & Castelfranchi, C. (2006), Pinto, R. (2006), Prakken, H. (2006a), Pratt, J. M. (1970), Reed, C. & Rowe, G. (2006), Reinard, J. C. (1984), Rieke, R. D. & Sillars, M. O. (1975), Rieke, R. D. & Stutman, R. K. (1990), Ryle, G. (1976), Schellens, P. J. (1979), Schellens, P. J. & Verhoeven, G. (1988), Schmidt, S. J. (1977), Schwitalla, J. (1976), Sikora, J. J. (1959), Tans, O. (2006), Toulmin, S. E. (1950, 1972, 1976, 1990, 1992, 2001b, 2003, 2006), Toulmin, S. E. & Janik, A. (1973), Toulmin, S. E., Rieke, R. & Janik, A. (1979), Trent, J. D. (1968), Verheij, B. (2003, 2006), Voss, J. F. (2006), Voss, J. F., Fincher-Kiefer, R., Wiley, J. & Ney Silfies, L. (1993), Weinstein, M. (1990a, 1990b), Will, F. L. (1960), Willard, C. A. (1983, 1989), Windes, R. R. & Hastings, A. C. (1969), Wunderlich, D. (1974), Zeleznikow, J. (2006)

Chapter 5 The new rhetoric

Abbott, D. (1989), Aikin, S. F. (2008), Alexy, R. W. (1978), Amossy, R. (2009b), Anderson, J. R. (1972), Arnold, C. C. (1986), Bizzell, P. & Herzberg, B. (1990), Centre National Belge de Recherches de Logique (1963), Conley, Th. M. (1990), Corgan, V. (1987), Costello, H. T. (1934), Cox, J. R. (1989), Crosswhite, J. (1989, 1993, 1996), Cummings, L. (2002), Danblon, E. (2009), Dearin, R. D. (1982, 1989), Dunlap, D. D. (1993), Ede, L. S. (1989), Eemeren, F. H. van (2010), Eemeren, F. H. van & Grootendorst, R. (1995), Eemeren, F. H. van, Grootendorst, R. & Kruijer, T. (1981, 1984, 1986, 1987), Eemeren, F. H. van, Grootendorst, R. & Snoeck Henkemans, A. F., with Blair, J. A., Johnson, R. H., Krabbe, E. C. W., Plantin, C., Walton, D. N., Willard, C. A., Woods, J. & Zarefsky, D. (1996), Eubanks, R. (1986), Farrell, Th. B. (1986), Fisher, W. R. (1986), Foss, S. K., Foss, K. & Trapp, R. (2002), Frank, D. A. (2004), Frank, D. A. & Bolduc, M. K. (2003), Frank, D. A. & Driscoll, W. (2010), Gage, J. T. (Ed. 2011), Garssen, B. (2001), Golden, J. L. (1986), Golden, J. L. & Pilotta, J. J. (Eds. 1986), Goodwin, D. (1991, 1992), Grácio, R. A. L. M. (1993), Graff, R. & Winn, W. (2006), Gross, A. G. (1999, 2000), Gross, A. G. & Dearin, R. D. (2003), Haarscher, G. (1986, Ed. 1993, 2009),

Haarscher, G. & Ingber, L. (Eds. 1986), Holmström-Hintikka, G. (1993), Johnstone Jr, H. W. (1993), Jørgensen, C. (2009), Karon, L. A. (1989), Kennedy, G. A. (1999), Kienpointner, M. (1983, 1992, 1993), Kluback, W. (1980), Koren, R. (1993, 2009), Laughlin, S. K. & Hughes, D. T. (1986), Leff, M. (2009), Leroux, N. R. (1994), Livnat, Z. (2009), Macoubrie, J. (2003), Makau, J. M. (1984, 1986), Maneli, M. (1978, 1994), McKerrow, R. E. (1982, 1986), Measell, J. S. (1985), Meyer, M. (1982a, 1986a, 1986b, Ed. 1989), Mickunas, A. (1986), Morresi, R. (2003), Nimmo, D. & Mansfield, M. W. (1986), Oakley, T. V. (1997), Olbrechts-Tyteca, L. (1963), Pavčnik, M. (1993), Pearce, K. C. & Fadely, D. (1992), Perelman, C. (1933, 1963, 1970, 1971, 1976, 1979a, 1979c, 1980, 1982, 1984), Perelman, C. & Olbrechts-Tyteca, L. (1958, 1966, 1969, 2008), Perelman, C., Zyskind, H., Kluback, W., Becker, M., Jacques, F., Barilli, R., Olbrechts-Tyteca, L., Apostel, L., Haarscher, G., Robinet, A., Meyer, M., van Noorden, S., Vasoli, C., Griffin-Collart, E., Maneli, M., Gadamer, H.-G., Raphael, D. D., Wroblewski, J., Tarello, G. & Foriers, P. (1979), Pilotta, J. J. (1986), Plantin, C. (2009b), Ray, J. W. (1978), Rees, M. A. van (2005, 2006, 2009), Reve, K. van het (1977), Rieke, R. D. (1986), Schiappa, E. (1985, 1993), Schuetz, J. (1991), Scult, A. (1976, 1985, 1989), Seibold, D. R., McPhee, R. D., Poole, M. S., Tanita, N. E. & Canary, D. J. (1981), Tindale, C. W. (1996, 2004, 2010b), Tordesillas, A. (1990), Toulmin, S. E. (1958), Walker, G. B. & Sillars, M. O. (1990), Wallace, K. R. (1989), Walton, D. N. (1992d), Walzer, A., Secor, M. & Gross, A. G. (1999), Warnick, B. (1981, 1997, 2001, 2004), Warnick, B. & Kline, S. L. (1992), Wiethoff, W. E. (1985), Wintgens, L. J. (1993), Yanoshevsky, G. (2009)

Chapter 6 Formal dialectical approaches

[6.1] Formal approaches

Barth, E. M. & Krabbe, E. C. W. (1982), Eemeren, F. H. van & Grootendorst, R. (2004), Finocchiaro, M. A. (1996), Fisher, A. (1988), Govier, T. (1987), Hall, R. (1967), Hamblin, C. L. (1970), Johnson, R. H. & Blair, J. A. (1991), Krabbe, E. C. W. (1982b, 1996, 2012b), Lorenzen, P. (1960), Mackenzie, J. D. (1979a, 1979b, 1984, 1985, 1988, 1989, 1990), Massey, G. J. (1975a, 1975b, 1981), Oliver, J. W. (1967), Perelman, C. & Olbrechts-Tyteca, L. (1958, 1969), Scholz, H. (1967), Toulmin, S. E. (1958), Walton, D. N. & Krabbe, E. C. W. (1995), Woods, J. (1995, 2004), Woods, J. & Walton, D. N. (1989)

[6.2] Erlangen school

Barth, E. M. (1980), Barth, E. M. & Krabbe, E. C. W. (1982), Beth, E. W. (1955, 1959, 1970), Hodges, W. (2001), Kamlah, W. & Lorenzen, P. (1967, 1973, 1984), Krabbe, E. C. W. (1978, 2006, 2008), Lorenz, K. (1961, 1968, 1973), Lorenzen, P. (1960, 1961, 1969, 1984, 1987), Lorenzen, P. & Lorenz, K. (1978), Lorenzen, P. & Schwemmer, O. (1973, 1975)

[6.3] Hintikka's systems

Åqvist, L. (1965, 1975), Bachman, J. (1995), Beth, E. W. (1955), Carlson, L. (1983), Hegselmann, R. (1985), Hintikka, J. (1968, 1973, 1976, 1981, 1985, 1987, 1989), Hintikka, J. & Bachman, J. (1991), Hintikka, J. & Hintikka, M. B. (1982), Hintikka, J. & Kulas, J. (1983), Hintikka, J. & Saarinen, E. (1979), Krabbe, E. C. W. (1978, 2006), Saarinen, E. (Ed. 1979)

[6.4] Rescher's dialectic

Rescher, N. (1977, 2007)

[6.5] Barth and Krabbe

Barth, E. M. (1982), Barth, E. M. & Krabbe, E. C. W. (1982), Barth, E. M. & Martens, J. L. (1977), Eemeren, F. H. van & Grootendorst, R. (1984, 1988, 1992a), Eemeren, F. H. van, Grootendorst, R., Jackson, S. & Jacobs, S. (1993), Grootendorst, R. (1978), Krabbe, E. C. W. (1982a, 1985, 1986, 1988), Walton, D. N. & Krabbe, E. C. W. (1995)

[6.6] Hamblin's formal dialectic

Hamblin, C. L. (1970, 1971), Hansen, H. V. (2002b), Krabbe, E. C. W. (2009), Krabbe, E. C. W. & Walton, D. N. (2011)

[6.7] Woods-Walton approach

Gabbay, D. & Woods, J. (2001), Krabbe, E. C. W. (1993), Mackenzie, J. D. (1979b, 1984, 1990), Walton, D. N. (2007a). Woods, J. (1980, 2004), Woods, J. & Walton, D. N. (1978, 1989)

[6.8] Mackenzie's systems

Carroll, L. (1894), Hamblin, C. L. (1970), Laar, J. A. van (2003a), Mackenzie, J. D. (1979a, 1979b, 1984, 1985, 1988, 1989, 1990, 2007)

[6.9] Walton and Krabbe

Walton, D. N. & Krabbe, E. C. W. (1995)

[6.10] Profiles of dialogue

Eemeren, F. H. van (2010), Eemeren, F. H. van, Houtlosser, P. & Snoeck Henkemans, A. F. (2007), Krabbe, E. C. W. (1992, 1995, 1996, 2001, 2002, 2003), Krabbe, E. C. W. & Laar, J. A. van (2012), Laar, J. A. van (2003a, 2003b), Walton, D. N. (1989a, 1989b, 1996b, 1997, 1999)

Chapter 7 Informal logic

[7.1] Conceptions of informal logic

Barth, E. M. & Krabbe, E. C. W. (1982), Carney, J. D. & Scheer, R. K. (1964), Freeman, J. B. (1991, 2011a), Govier, T. (1987), Johnson, R. H. (2000), Johnson, R. H. & Blair, J. A. (2000, 2006), Kahane, H. (1971), Ryle, G. (1954). Walton, D. N. & Krabbe, E. C. W. (1995)

[7.2] The informal logic movement

Battersby, M. E. (1989), Beardsley, M. C. (1950a), Birdsell, D. S. & Groarke, L. (1996), Blair, J. A. (1987, 2004, 2009, 2011b), Blair, J. A. & Johnson, R. H. (1987, Eds. 2011), Brandon, E. P. (1992), Conway, D. (1991), Elder, L. & Paul, R. (2009), Ennis, R. H. (1962, 1982, 1987, 1989), Fisher, A. (1988), Freeman, J. B. (1991, 2005a, 2005b), Gilbert, M. (1997), Goagh, J. & Tindale, C. (1985), Godden, D. M. (2005), Goddu, G. C. (2001), Govier, T. (1980, 1985, 1987), Grennan, W. (1994), Groarke, L. (1992), Groarke, L. & Tindale, C. (2012), Hansen, H. V. (1990, 2011a), Hansen, H. V. & Pinto, R. C. (Eds. 1995), Hitchcock, D. L. (1980, 1985), Hoaglund, J. (2004), Johnson, R. H. (1981, 1996, 2000, 2003, 2006), Johnson, R. H. & Blair, J. A. (1977, 2000, 2006), Kahane, H. (1971), Levi, D. S. (2000), McPeck, J. (1981, 1990), Nosich, G. (1982, 2012), Paul, R. (1982, 1990), Perelman, C. & Olbrechts-Tyteca, L. (1958), Pinto, R. C. (1994), Reed, C. A. (1997), Reed, C. A. & Norman, T. J. (2003), Scriven, M. (1976), Snoeck Henkemans, A. F. (2001), Thomas, S. N. (1973, 1986), Tindale, C. W. (1999, 2004, 2010a), Toulmin, S. E. (1958), Verheij, B. (1999), Vorobej, M. (1995), Walton, D. N. (1992b, 1996a, 1996c, 2007a), Walton, D. N. & Krabbe, E. C. W. (1995), Walton, D. N., Reed C. A. & Macagno, F. (2008), Weddle, P. (1979), Weinstein, M. (1990a), Woods, J. & Walton, D. N. (1989), Yanal, R. J. (1991)

[7.3] Blair and Johnson

Biro, J. I. & Siegel, H. (1992), Blair, J. A. (2011a), Blair, J. A. & Johnson, R. H. (1987), Freeman, J. B. (1988), Govier, T. (1999), Hamblin, C. L. (1970), Johnson, R. H. (1990,

1992, 1996, 2000, 2003), Johnson, R. H. & Blair, J. A. (1983, 1994, 2006), Leff, M. (2000), Little, J. F., Groarke, L. A. & Tindale, C. W. (1989), Rees, M. A. van (2001), Seech, Z. (1993), Tindale, C. W. (1999), Woods, J. (1994)

[7.4] Finocchiaro

Finocchiaro, M. A. (1980, 1989, 2005a, 2005b, 2010), Pinto, R. C. (2007), Wagemans, J. H. M. (2011a), Woods, J. (2008)

[7.5] Govier

Allen, D. (1990), Blair, J. A. (2013), Govier, T. (1985, 1987, 2010), Wellmann, C. (1971), Wisdom, J. (1991)

[7.6] Epistemological approaches

Adler (2013), Battersby, M. E. (1989), Biro, J. I. & Siegel, H. (2006a), Botting, D. (2010, 2012a), Eemeren, F. H. van (2012), Feldman, R. (1994, 1999), Fogelin, R. J. & Duggan, T. J. (1987), Freeman, J. B. (2005a), Garssen, B. & Laar, J. A. van (2010), Goldman, A. I. (1994, 1999), Hansen, H. V. & Pinto, R. C. (1995), Hitchcock, D. L. (1985, 1998), Johnson, R. H. (2000), Lumer, C. (1988, 1990, 2000, 2003, 2005a, 2010, 2012), Pinto, R. C. (2001, 2006, 2009, 2010), Siegel, H. & Biro, J. I. (1997, 2008, 2010), Toulmin, S. E. (1958), Weinstein, M. (1994, 2002, 2006)

[7.7] Freeman

Beardsley, M. C. (1950a), Cohen, J. L. (1992), Eemeren, F. H. van & Grootendorst, R. (1984, 1992a), Freeman, J. B. (1991, 2005a, 2005b, 2011a), Grice, H. P. (1975), Hart, H. L. A. (1951), Krabbe, E. C. W. (2007), Plantinga, A. (1993), Pollock, J. L. (1995), Reed, C. A. & Rowe, G. W. A. (2004), Rescher, N. (1977), Snoeck Henkemans, A. F. (1992, 1994), Thomas, S. N. (1986), Walton, D. N. (1996a), Wigmore, J. H. (1931)

[7.8] Walton on argumentation schemes and dialogue types

Eemeren, F. H. van & Krugier, T. (1987), Garssen, B. (2001), Grennan, W. (1997), Hastings, A. C. (1963), Kienpointner, M. (1992), McBurney, P. & Parsons, S. (2001), Gordon, T. F., Prakken, H. & Walton, D. N. (2007), Wagemans, J. H. M. (2011b), Walton, D. N. (1989, 1996a, 1996b, 1997, 1998b, 2002b, 2008a, 2008b, 2010), Walton, D. N. & Krabbe, E. C. W. (1995), Walton, D. N., Reed, C. A. & Macagno, F. (2008), Woods, J. & Walton, D. N. (1989)

[7.9] Hansen

Hansen, H. V. (2002a, 2002b, 2006, 2011a, 2011b, 2011c), Hansen, H. V. & Pinto, R. C. (1995), Hansen, H. V. & Walton, D. N. (2013), Hintikka, J. (1987), Johnson, R. H. (2000), Walton, D. N. (1996b, 2006), Woods, J. & Hansen, H. V. (1997)

[7.10] Hitchcock

Eemeren, F. H. van, Grootendorst, R. & Kruiger, T. (1984), Freeman, J. B. (1991), Giral, R., Hitchcock, D. L., McBurney, P. & Verheij, B. (2004), Hitchcock, D. L. (2002b, 2002c, 2003, 2005a, 2006b, 2011b), Jenicek, M., Croskerry, P. & Hitchcock, D. L. (2011), Jenicek, M. & Hitchcock, D. L. (2005), Johnson, R. H. (1996), Johnson, R. H. & Blair, J. A. (2000), McBurney, P., Hitchcock, D. L. & Parsons, S. (2007), Perelman, C. & Olbrechts-Tyteca, L. (1969)

[7.11] Tindale

Bakhtin, M. M. (1981, 1986), Blair, J. A. (2000) Eemeren, F. H. van & Grootendorst, R. (1995), Schulz, P. (2006), Sperber, D. & Wilson, D. (1986), Tindale, C. W. (1999, 2004, 2006, 2010a)

Chapter 8 Communication studies and rhetoric
[8.1] Development of communication studies and rhetoric

Cohen, H. (1994), Winans, J. A. & Utterback, W. E. (1930), Yost, M. (1917)

[8.2] Debate

Baker, G. P. (1895), Baker, G. P. & Huntington, H. B. (1905), Branham, R. J. (1991), Chesebro, J. W. (1968, 1971), Dauber, C. E. (1988), Dewey, J. (1916), Ehninger, D. & Brockriede, W. (1963), Eemeren, F. H., van & Houtlosser, P. (Eds. 2002), Fadely, L. D. (1967), Foster, W. T. (1908), Freeley, A. J. & Steinberg, D. L. (2009), Goodnight, G. Th. (1980, 1991), Gray, G. W. (1954), Guthrie, W. (1954), Hastings, A. C. (1962), Howell, W. S. (1940), Hultzen, L. S. (1958), Ivie, R. L. (1987), *Journal of the American Forensic Association*, (1982), Kaplow, L. (1981), Laycock, C. & Scales, R. L. (1904), Lewinski, J. D., Metzler, B. R. & Settle, P. L. (1973), Lichtman, A., Garvin, C. & Corsi, J. (1973), Lichtman, A. J. & Rohrer, D. M.

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[8.3] Starting points for theorizing

Brockriede, W. (1992), Burleson, B. R. (1979, 1980), Farrell, T. B. (1977), Hample, D. (1977a, 1977b, 1978, 1979a, 1979b, 1980, 1981, 1978, 1992), Kneupper, C. W. (1979), McKerrow, R. E. (1977), O'Keefe, D. J. (1992), Wenzel, J. W. (1992), Willard, C. A. (1976, 1978, 1983, 1989, 1996), Young, M. J. & Launer, M. K. (1995), Zarefsky, D. (1980, 1995)

[8.4] Historical-political analysis

Brockriede, W. (1992), Campbell, J. A. (1993), Cohen, H. (1994), Leff, M. C. (2003), Leff, M. C. & Mohrmann, G. P. (1993), Newman, R. P. (1961), Schiappa, E. (2002), Williams, D. C., Ishiyama, J. T., Young, M. J. & Launer, M. K. (1997), Young, M. J. & Launer, M. K. (1995), Zarefsky, D. (1980, 1986, 1990)

[8.5] Rhetorical studies

Bitzer, L. F. (1999), Brummett, B. (1999), Ehninger, D. (1970), Fahnestock, J. (2011), Farrel, T. B. (1999), Finnegan, C. A. (2003), Fisher, W. R. (1987), Gross, A. (1990), Hunter, A. (Ed. 1990), Johnstone Jr, H. W. (1959, 1970, 1983), Keith, W. (Ed. 1993), Kellner, H. (1989), Lucaites, J. L. & Condit, C. M. (1999), McBurney, J. H. (1994), McCloskey, D. N. (1985), Natanson, M. & Johnstone Jr., H. W. (1965), Nelson, J. S., Megill, A. & McCloskey, D. N. (Eds. 1987), Prelli, L. J. (1989), Schiappa, E. (2001), Schiappa, E. & Swartz, O. (1994), Scott, R. L. (1999), Simons, H. W. (1990)

[8.6] Argument fields and spheres

Balthrop, V. W. (1989), Biesecker, B. (1989), Birdsell, D. S. (1989), Dauber, C. E. (1988, 1989), Dunbar, N. R. (1986), Goodnight, G. Th. (1980, 1982, 1987a, 1987b, 2012), Goodnight, G. Th. & Gilbert, K. (2012), Gronbeck, B. E. (Ed. 1989), Hazen, M. D. & Hynes, T. J. (2011), Holmquest, A. H. (1989), Hynes, T. J. (1989), Klumpp, J. F., Riley P. & Hollihan, T. H. (1995), Lyne, J. (1983), Mandziuk, R. M. (2011), Palczewski, C. H. (2002, 2012), Peters, T. N. (1989), Rowland, R. C. (1992, 2012), Schiappa, E. (1989, 2012), Sillars, M. O. (1981), Toulmin, S. E. (1972, 2003), Willard, C. A. (Ed. 1982, 1992), Zarefsky, D. (1992, 2012)

[8.7] Normative pragmatics

Eemeren, F. H. van (1990), Goodwin, J. (2005, 2007), Jacobs, S. (1998, 2000), Manolescu, B. I. (2006), Kauffeld, F. J. (1998, 2009)

[8.8] Persuasion research

Amjarso, B. (2010), Eagly, A. H. & Chaiken, S. (1993), Hoeken, H. (1999), O'Keefe, D. J. (2002), O'Keefe, D. J. & Jackson, S. (1995), Petty, R. E. & Cacioppo, J. T. (1986a, 1986b)

[8.9] Interpersonal communication

Aakhus, M. (2003, 2011), Aakhus, M. & Lewiński, M. (2011), Benoit, P. J. (1981, 1983), Benoit, P. J. & Benoit, W. E. (1990), Canary, D. J., Brossman, B. G. & Seibold, D. R. (1987), Canary, D. J. & Sillars, M. O. (1992), Canary, D. J., Weger, H. & Stafford, L. (1991), Craig, R. T. & Tracy, K. (Eds. 1983, 2005, 2009), Eemeren, F. H. van, Grootendorst, R., Jackson, S. & Jacobs, S. (1993), Hample, D. (2005), Hample, D., Warner, B. & Young, D. (2009), Hicks, D. & Eckstein, J. (2012), Jackson, S. (1983, 1992), Jackson, S. & Jacobs, S. (1980, 1982), Jacobs, S. (1989), Jacobs, S. & Jackson, S. (1981, 1982, 1983, 1989), Johnson, K. L. & Roloff, M. E. (2000), O'Keefe, B. J. & Benoit, P. J. (1982), Putnam, L. L., Wilson, S. R., Waltman, M. S. & Turner, D. (1986), Sacks, H., Schegloff, E. A. & Jefferson, G. (1974), Trapp, R. (1990), Weger, H. (2001, 2002, 2013), Willard, C. A. (1989)

Chapter 9 Linguistic approaches

[9.2] Grize's natural logic

Borel, M.-J. (1989, 1991, 1992), Borel, M.-J., Grize, J.-B. & Miéville, D. (1983), Campos, M. (2010), Culioli, A. (1990, 1999), Gattico, E. (2009), Gomez Diaz, L. M. (1991), Grize, J.-B. (1982, 1986, 1996, 2004), Herman, T. (2010), Maier, R. (1989), Piaget, J. (1923), Piaget, J. & Beth, E. W. (1961), Sitri, F. (2003)

[9.3] Ducrot and Anscombe's semantic approach

Anscombe, J.-C. & Ducrot, O. (1983, 1989), Apothéloz, D., Brandt P.-Y. & Quiroz, G. (1991), Atayan, V. (2006), Bassano, D. (1991), Bassano, D. & Champaud, C. (1987a, 1987b, 1987c), Carel, M. (1995, 2001, 2011), Carel, M. & Ducrot, O. (1999, 2009), Ducrot, O. (1980, 1984, 1990, 2001, 2004), Ducrot, O., Bourcier, D., Bruxelles, S., Diller, A.-M., Fouquier, E., Gouazé, J., Maury, L., Nguyen, T. B., Nunes, G., Ragunet

de Saint-Alban, L., Rémis, A. & Sirdar-Iskander, Chr. (1980), Eemeren, F. H. van & Grootendorst, R. (1994a), Grize, J.-B. (1996), Iten, C. (2000), Lundquist, L. (1987), Meyer, M. (1986b), Moeschler, J. & Spengler, N. de (1982), Nølke, H. (1992), Puig, L. (2012), Quiroz, G., Apothélos, D. & Brandt, P.-Y. (1992), Rocci, A. (2009), Snoeck Henkemans, A. F. (1995a, 1995b), Verbiest, A. E. M. (1994), Verhagen, A. (2007), Žagar, I. Ž. (1995b, Ed. 1996)

[9.4] Francophone discourse analytic approaches

Amossy, R. (1991, Ed. 1999, 2001, 2002, 2005, 2006, 2009a, 2010), Amossy, R. & Herschberg Pierrot, A. (Eds. 2011), Barthes, R. (1988), Caffi, C. I. & Janney, R. W. (1994), Doury, M. (1997, 2004a, 2004b, 2005, 2006, 2009), Koren, R. & Amossy, R. (Eds. 2002), Lausberg, H. (1960), Plantin, C. (1990, 1995, 1997, 2002, 2003, 2004a, 2004b, 2005, 2009a, 2009b, 2010, 2011), Plantin, C., Doury, M. & Traverso, V. (2000), Scherer, K. R. (1984), Ungerer, F. (1997)

[9.5] The Luganese semantic-pragmatic approach

Eemeren, F. H. van & Grootendorst, R. (1992a, 2004), Eemeren, F. H. van & Houtlosser, P. (2002b), Greco Morasso, S. (2011), Palmieri, R. (2009), Rigotti, E. (2009), Rigotti, E. & Greco [Morasso], S. (2004, 2006, 2009, 2010), Rigotti, E. & Rocci, A. (2005), Rocci, A. (2008), Wierzbicka, A. (1997)

Chapter 10 The pragma-dialectical theory

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R. & Snoeck Henkemans, A. F., with Blair, J. A., Johnson, R. H., Krabbe, E. C. W., Plantin, C., Walton, D. N., Willard, C. A., Woods, J. & Zarefsky, D. (1996), Eemeren, F. H. van & Houtlosser, P. (1999, 2000a, 2000b, 2002a, 2002b, 2003a, 2003b, 2007, 2008), Eemeren, F. H. van, Houtlosser, P., Ihnen [Jory], C. & Lewiński, M. (2010), Eemeren, F. H. van, Houtlosser, P. & Snoeck Henkemans, A. F. (2007, 2011), Eemeren, F. H. van, Jackson, S. & Jacobs, S. (2011), Eemeren, F. H. van, Meuffels, B. & Verburg, M. (2000), Fairclough, N. (1995), Feteris, E. T. (1989, 1999, 2002, 2009), Finocchiaro, M. (2006), Fisher, A. (2004), Foss, S., Foss, K. & Trapp, R. (1985), Frank, D. A. (2004), Garssen, B. J. (1997, 2002, 2009), Garssen, B. & Laar, J. A. van (2010), Garver, E. (2000), Gerber, M. (2011), Gerlofs, J. M. (2009), Gerritsen, S. (1999), Gilbert, M. A. (1997, 2001, 2005), Goodnight, G. T. & Pilgram, R. (2011), Goodwin, J. (1999), Greco Morasso, S. (2009), Grice, H. P. (1989), Groarke, L. (1995), Habermas, J. (1971, 1981, 1994, 1996), Hall, P. A. & Taylor, R. C. R. (1996), Hamblin, C. L. (1970), Hample, D. (2003, 2007), Hansen, H. (2003), Hietanen, M. (2005), Hohmann, H. (2002), Houtlosser, P. (1995, 2003), Hymes, D. (1972), Ieşcu-Fairclough, I. (2009), Ihnen Jory, C. (2010, 2012b), Jackson, S. (1992, 1995), Jackson, S. & Jacobs, S. (2006), Jacobs, S. (1987), Jacobs, S. & Aakhus, M. (2002), Jansen, H. (2003, 2005), Johnson, R. H. (1995, 2000, 2003), Jungslager, F. S. (1991), Kauffeld, F. (2006), Kennedy, G. A. (1994), Kloosterhuis, H. T. M. (2002, 2006), Kock, C. (2003b, 2007), Koetsenruijter, A. W. M. (1993), Krabbe, E. C. W. (2002), Kutrovátz, G. (2009), Laar, J. A. van (2008), Labrie (2012), Levinson, S. C. (1992), Lewiński, M. (2010b), Lumer, C. (2010, 2012), Lunsford, A., Wilson, K. & Eberly, R. (2009), Mohammed, D. (2009), Muraru, D. (2010), Oostdam, R. J. (1991), Perelman, C. & Olbrechts-Tyteca, L. (1969), Pike, K. L. (1967), Pinto, R. C. & Blair, J. A. (1989), Plug, H. J. (1999, 2000a, 2000b, 2002, 2010, 2011), Poppel, L. van (2011, 2013), Poppel, L. van & Rubinelli, S. (2011), Popper, K. R. (1972, 1974), Rees, M. A. van (1989, 1991, 1992a, 1992b, 1994a, 1994b, 1995a, 1995b, 2001, 2003, 2009), Rigotti, E. & Rocci, A. (2006), Searle, J. R. (1969, 1979, 1995), Siegel, H. & Biro, J. (2010), Slot, P. (1993), Smith, E. E. & Medin, D. L. (1981), Snoeck Henkemans, A. F. (1992, 2005, 2009a, 2009b, 2011), Swearingen, C. J. & Schiappa, E. (2009), Tindale, C. W. (1999, 2004), Tonnard, Y. M. (2011), Toulmin, S. E. (1976), Tseronis, A. (2009), Verbiest, A. E. M. (1987), Viskil, E. (1994), Wagemans, J. H. M. (2009, 2011), Walton, D. N. (1991a, 1991b, 1992a, 1998b, 1999, 2007a), Walton, D. N. & Krabbe, E. C. W. (1995), Wenzel, J. W. (1990), Wohlrapp, H. (2009), Woods, J. (1991, 2004, 2006), Woods, J. & Walton, D. N. (1989), Wreen, M. J. (1994), Zemplén, G. A. (2008), Zenker, F. (2007a, 2007b).

Chapter 11 Artificial intelligence

[11.1] Argumentation in artificial intelligence

Bench-Capon, T. J. M. & Dunne, P. E. (2007), Prakken, H. & Vreeswijk, G. A. W. (2002), Rahwan, I. & Simari, G. R. (Eds. 2009), Reed, C. A. & Norman, T. J. (2004, Eds. 2004)

[11.2] Non-monotonic logic

Antonelli, G. A. (2010), Bratko, I. (2001), Gabbay, D. M., Hogger, C. J. & Robinson, J. A. (Eds. 1994), Gelfond, M. & Lifschitz, V. (1988), Ginsberg, M. L. (1994), Kowalski, R. A. (2011), Kyburg, H. E. (1994), Makinson, D. (1994), Nute, D. (1994), Reiter, R. (1980)

[11.3] Defeasible reasoning

d'Avila Garcez, A. S., Lamb, L. C. & Gabbay, D. M. (2009), Bondarenko, A., Dung, P. M., Kowalski, R. A. & Toni, F. (1997), Gómez Lucero, M., Chesñevar, C. & Simari, G. (2009, 2013), Hart, H. L. A. (1951), Hitchcock, D. L. (2001, 2002a), Loui, R. P. (1995), Pollock, J. L. (1987, 1995), Prakken, H. (2005a, 2010), Toulmin, S. E. (2003), Verheij, B. (1996a)

[11.4] Abstract argumentation

Baroni, P., Caminada, M. & Giacomin, M. (2011), Caminada, M. (2006), Dung, P. M. (1995), Dunne, P. E. (2007), Dunne, P. E. & Bench-Capon, T. J. M. (2003), Egly, U., Gaggl, S. A. & Woltran, S. (2010), Jakobovits, H. & Vermeir, D. (1999), Pollock, J. L. (1994), Verheij, B. (1996b, 2007)

[11.5] Arguments with structure

Amgoud, L., Cayrol, C., Lagasque-Schiex, M. C. & Livet, P. (2008), Antoniou, G., Billington, D., Governatori, G. & Maher, M. (2001), Besnard, P. & Hunter, A. (2008), Bondarenko, A., Dung, P. M., Kowalski, R. A. & Toni, F. (1997), Cayrol, C. & Lagasque-Schiex, M. C. (2005), Chesñevar, C. I., Simari, G. R., Alsinet, T. & Godo, L. (2004), Falappa, M. A., Kern-Isberner, G. & Simari, G. R. (2002), García, A. J., & Simari, G. R. (2004), Gordon, T. F., Prakken, H. & Walton, D. N. (2007), Hage, J. C. (1997), Modgil, S. (2005), Poole, D. L. (1985), Prakken, H. (1997), Simari, G. R. & Loui, R. P. (1992), Verheij, B. (2003a, 2005a, 2005b), Vreeswijk, G. A. W. (1997)

[11.6] Argument schemes

Bex, F. J., Prakken, H., Reed, C. & Walton, D. N. (2003), Eemeren, F. H. van & Grootendorst, R. (1992a), Eemeren, F. H. van, Grootendorst, R. & Kruijer, T. (1978, 1984), Eemeren, F. H. van & Kruijer, T. (1987), Garssen, B. (2001), Hastings, A. C. (1963), Kienpointner, M. (1992), Perelman, C. & Olbrechts-Tyteca, L. (1969), Rahwan, I., Zablith, F. & Reed, C. (2007), Reed, C. A. & Rowe, G. W. A. (2004), Reed, C. A. & Tindale, C. W. (Eds. 2010), Verheij, B. (2003b), Walton, D. N., Reed, C. A. & Macagno, F. (2008)

[11.7] Argumentation dialogues

Alexy, R. (1978), Amgoud, L. (2009), Ashley, K. D. (1990), Atkinson, K. & Bench-Capon, T. J. M. (2007), Atkinson, K., Bench-Capon, T. J. M. & McBurney, P. (2005, 2006), Barth, E. M. & Krabbe, E. C. W. (1982), Bench-Capon, T. J. M., Freeman, J. B., Hohmann, H. & Prakken, H. (2004), Bench-Capon, T. J. M., Geldard, T. & Leng, P. H. (2000), Bench-Capon, T. J. M., Prakken, H. & Sartor, G. (2009), Brewka, G. (2001), Dignum, F., Dunin-Keřpicz, B. & Verbrugge, R. (2001), Girle, R., Hitchcock, D. L., McBurney, P. & Verheij, B. (2004), Gordon, T. F. (1993, 1995), Gordon, T. F. & Karacapilidis, N. (1997), Habermas, J. (1973), Hage, J. C. (2000), Hage, J. C., Leenes, R. & Lodder, A. R. (1993), Hofstadter, D. (1996), Lodder, A. R. (1999), Lorenzen, P. & Lorenz, K. (1978), Loui, R. P. (1987, 1998). Loui, R. & Norman, J. (1995), Loui, R., Norman, J., Altepeter, J., Pinkard, D., Craven, D., Lindsay, J. & Foltz, M. A. (1997), Mackenzie, J. D. (1979), McBurney, P. & Parsons, S. (2002a, 2002b, 2009), McBurney, P., Hitchcock, D. L. & Parsons, S. (2007), Parsons, S., Sierra, C. & Jennings, N. R. (1998), Prakken, H. (2005b, 2006b, 2009), Prakken, H. & Sartor, G. (1996, 1998), Rahwan, I., Ramchurn, S. D., Jennings, N. R., McBurney, P., Parsons, S. & Sonenberg, E. (2003), Rao, A. & Georgeff, M. (1995), Schwemmer, O. & Lorenzen, P. (1973), Sycara, K. (1989), Vreeswijk, G. A. W. (1993, 1995a, 1995b, 2000), Walton, D. N. & Krabbe, E. C. W. (1995), Wooldridge, M. (2009)

[11.8] Reasoning with rules

Dworkin, R. (1978), Gardner, A. (1987), Hage, J. C. (2005), McCarty, L. (1977), Prakken, H. (1993), Sartor, G. (2005), Verheij, B., Hage, J. C. & Herik, H. J. van den (1998)

[11.9] Case-based reasoning

Aleven, V. (1997), Aleven, V. & Ashley, K. D. (1997a, 1997b), Ashley, K. D. (1989), Branting, L. K. (1991, 2000), Rissland, E. L. & Ashley, K. D. (1987, 2002), Roth, B. (2003)

[11.10] Values and audiences

Bench-Capon, T. J. M. (2003), Bench-Capon, T. J. M. & Sartor, G. (2003), Berman, D. & Hafner, C. (1993)

[11.11] Argumentation support software

Bench-Capon, T. J. M., Araszkievicz, M., Ashley, K., Atkinson, K., Bex, F., Borges, F., Bourcier, D., Bourguine, D., Conrad, J. G., Francesconi, E., Gordon,

T. F., Governatori, G., Leidner, J. L., Lewis, D. D., Loui, R. P., McCarty, L. T., Prakken, H., Schilder, F., Schweighofer, E., Thompson, P., Tyrrell, A., Verheij, B., Walton, D. N. & Wyner, A. Z. (2012), Braak, S. W. van den, Vreeswijk, G. A. W. & Prakken, H. (2007), Chesñevar, C., McGinnis, J., Modgil, S., Rahwan, I., Reed, C., Simari, G., South, M., Vreeswijk, G. A. W. & Willmott, S. (2006), Gelder, T. van (2007), Karacapilidis, N. & Papadias, D. (2001), Kirschner, P. A., Buckingham Shum, S. J. & Carr, C. S. (Eds. 2003), Kunz, W. & Rittel, H. (1970), Pollock, J. L. (1989), Rittel, H. & Webber, M. (1973), Scheuer, O., Loll, F., Pinkwart, N. & McLaren, B. M. (2010), Suthers, D. (1999), Suthers, D., Weiner, A., Connelly, J. & Paolucci, M. (1995), Thagard, P. (1992)

[11.12] Burden of proof, evidence, and argument strength

Bex, F. J. (2011), Bex, F. J., Koppen, P. van, Prakken, H. & Verheij, B. (2010), Bex, F. J. & Verheij, B. (2012), Dung, P. M. & Thang, P. M. (2010), Fenton, N. E., Neil, M. & Lagnado, D. A. (2012), Fitelson, B. (2010), Hepler, A. B., Dawid, A. P. & Leucari, V. (2007), Hunter, A. (2013), Jensen, F. V. & Nielsen, T. D. (2007), Josephson, J. R. & Josephson, S. G. (Eds. 1996), Kjaerulff, U. B. & Madsen, A. L. (2008), Pearl, J. (1988, 2009), Pollock, J. L. (2006, 2010), Prakken, H. & Sartor, G. (2007, 2009), Riveret, R., Rotolo, A., Sartor, G., Prakken, H. & Roth, B. (2007), Talbott, W. (2011), Taroni, F., Aitken, C., Garbolino, P. & Biedermann, A. (2006), Verheij, B. (2012), Zukerman, I., McConachy, R. & Korb, K. (1998)

[11.13] Applications and case studies

Atkinson, K. (2012), Buckingham Shum, S. & Hammond, N. (1994), Crosswhite, J., Fox, J., Reed, C. A., Scaltsas, T. & Stumpf, S. (2004), Elhadad, M. (1995), Fox, J. & Das, S. (2000), Fox, J. & Modgil, S. (2006), Grasso, F. (2002), Grasso, F., Cawsey, A. & Jones, R. (2000), Green, N. (2007), Hunter, A. & Williams, M. (2010), McCarty, L. (1995), Mochales Palau, R. & Moens, S. (2009), Rahwan, I. & McBurney, P. (2007), Reed, C. A. (1999), Reed, C. A. & Grasso, F. (2007), Teufel, S. (1999)

Chapter 12 Related disciplines and non-Anglophone areas

[12.2] Critical discourse analysis

Atkin, A. & Richardson, J. E. (2007), Dijk, T. A. van (2001), Eemeren, F. H. van (2010), Eemeren, F. H. van & Grootendorst, R. (1992a), Fairclough, N. (2001, 2003), Fairclough, I. & Fairclough, N. (2012), Forchtner, B. & Tominc, A. (2012), Fowler, R. & Kress, G. (1979), Iețcu-Fairclough, I. (2008, 2009), Ihnen [Jory], C. & Richardson, J. E. (2011), Reisigl, M. & Wodak, R. (2009), Simpson, P. (1993),

Titscher, S., Meyer, M., Wodak, R. & Vetter, E. (2000), Walton, D. N. (2007b), Walton, D. N., Reed, C. & Macagno, F. (2008), Widdowson, H. G. (1998), Wodak, R. (2009)

[12.3] Historical controversy analysis

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[12.5] Argumentative turn in psychology

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[12.7] German-speaking areas

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[12.9] French-speaking areas

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Canada

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[12.11] Eastern Europe

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Croatia

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Romania

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[12.12] Russia and other parts former USSR*Armenia*

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Tchouechov, V. (1993, 1999, 2011), Vasilyeva, A. L. (2011, 2012), Yaskevich, Y. (1993, 1999, 2003, 2007)

[12.13] Spanish-speaking areas

Adrian, T. (2011), Albuquerque (1995), Alcolea Banegas, J. (2007), Alexy, R. (1978), Álvarez, G. (1996, 2007), Álvarez, N. & Sánchez, I. (2001), Amestoy, M. (1995), Andone, C. (2012), Bentancur, L. (2009), Bermejo-Luque, L. (2007, 2011), Biro, J. & Siegel, H. (2011), Carbonell, F. (2011), Cárdenas, A. (2005), Cardona, N. K. (2008), Carrascal, B. & Mori, M. (2011), Comesaña, J. (1998), Crespo, N. (1995, 2005), Crespo, C. & Farfán, R. (2005), Cuenca, M. J. (1995), Ducrot, O. (1986), Eemeren, F. H. van (2013b), Eemeren, F. H. van & Grootendorst, R. (2007, 2011, 2013), Eemeren, F. H. van, Grootendorst, R. & Snoeck Henkemans, A. F. (2006c), Feteris (2007), Freeman, J. B. (2011b), Fuentes, C. & Kalawski, A. (2007), Gómez, A. L. (2003, 2006), Haidar, J. (2010), Harada, E. (Ed. 2011), Hitchcock, D. L. (2011), Huerta, M. (2009), Ihnen [Jory], C. (2012a, 2012b), Ihnen [Jory], C. & Richardson, J. E. (2011), Jelvez, L. (2008), Kennedy, G. (1999), Korta, K. & Garmendia, J. (Eds. 2008), Lanzadera, M., García, F., Montes, S. & Valadés, J. (2007), Leal Carretero, F., Ramírez González, C. F. & Favila Vega, V. M. (Eds. 2010), López, C. (2007), López, C. & Vicuña, A. M. (2011), López de la Vieja, M. T. (2010), Marafioti, R. (2003, 2007), Marafioti, R., Dumm, Z. & Bitonte, M. E. (2007), Marafioti, R., Pérez de Medina, E. & Balmayor, E. (Eds. 1997), Marinkovich, J. (2000, 2007), Marraud, H. (2013), Martínez [Solis], M. C. (2005, 2006, 2007), Meza, P. (2009), Miranda, T. (1998, 2002), Monzón, L. (2011), Navarro, M. G. (2009, 2011), Nettel, A. N. (2011), Nettel, A. N. & Roque, G. (2012), Noemi, C. (2011), Olmos, P. & Vega, L. (2011), Ortega de Hocesvar, S. (2003, 2008), Osorio, J. (2006), Padilla, C. (1997), Padilla, C. & López, E. (2011), Parodi, G. (2000), Peón, M. (2004), Pereda, C. (1992a, 1992b), Perelman, C. (1977), Perelman, C. & Olbrechts-Tyteca, L. (1958), Pineda, O. (2004), Pinto, R. C. (2011), Poblete, C. (2003), Posada, P. (2010), Prakken, H. (2013), Prian, J. (2007), Puig, L. (2012), Quintrileo, C. (2007), Reygadas, P. (2005), Reygadas, P. & Guzman, J. (2007), Rivano, E. (1984, 1999), Roque, G. (2008, 2010, 2011a, 2011b), Santibáñez Yanez, C. (2010a, 2010b, 2010c, 2012a, 2012b, 2012c), Urbieta, L. & Carrascal, B. (2007), Valenzuela, R. (2009), Vaz Ferreira, C. (1945), Vega, L. (2005), Vega, L. & Olmos, P. (2007, Eds. 2011), Vicuña Navarro, A. M. (2007), Walton, D. N. & Krabbe, E. C. W. (2013), Yun Xie (2012), Zubiria, J. de (2006)

[12.14] Portuguese-speaking areas

Portugal

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